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AS-BUILT			BY _____		DATE _____		PROTECTION LOGIC DIAGRAM (AC/DC CIRCUITS)	
03	28.12.11	REVISED AS PER SEC LETTER *030343/270232/11, DATED: 10/09/2011	DRAWN BY <u>M.USMAN</u> CHECKED BY <u>TAMER</u>				132kv SYSTEM	
02	06.08.11	REVISED AS PER SEC LETTER *030343/0144/11, DATED: 29/06/2011	DATE STARTED <u>09.02.2011</u> DATE COMPLETED _____				CONSTRUCTION OF NEW 380/132/13.8KV S/S*9027	
01	03.04.11	REVISED AS PER SEC LETTER *030343/0037/11, DATED: 22-03-2011	CPRG. DEPT. _____ ENG. DEPT. _____				RIYADH SAUDI ARABIA	
REV. NO.	DATE	DESCRIPTION						

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A									
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PROTECTION LOGIC (AC CIRCUIT) 132kV SYSTEM SYNCHRONISING SCHEME	640-645	03

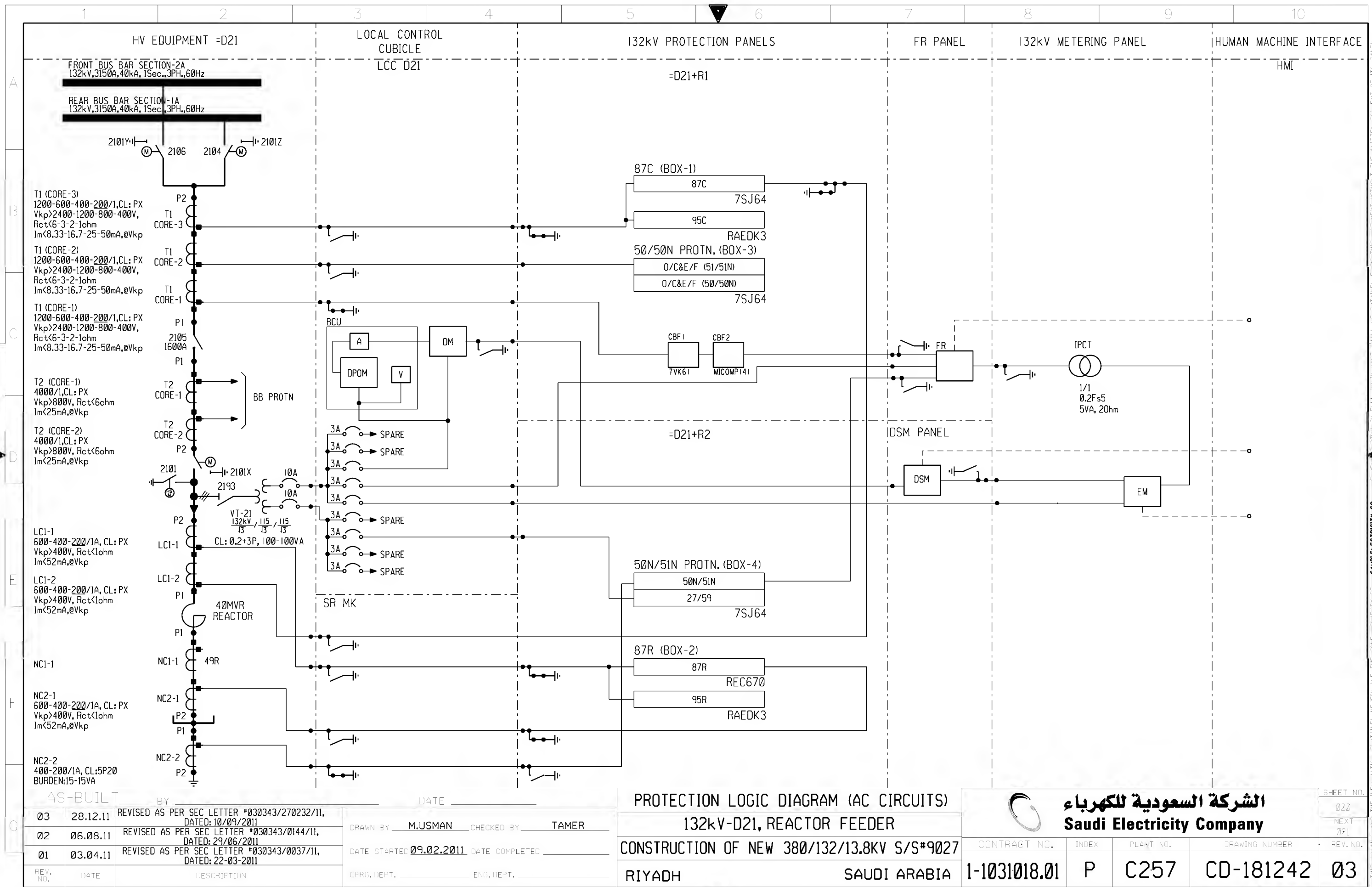
AS-BUILT			BY	DATE	132kV LIST OF CONTENTS		 الشركة السعودية للكهرباء Saudi Electricity Company				SHEET NO.	
03	28.12.11	REVISED AS PER SEC LETTER #030343/270232/11, DATED: 10/09/2011				PROTECTION LOGIC DIAGRAMS					02	
02	06.08.11	REVISED AS PER SEC LETTER #030343/0144/11, DATED: 29/06/2011	DRAWN BY	M.USMAN	CHECKED BY	TAMER					NEXT 022	
01	03.04.11	REVISED AS PER SEC LETTER #030343/0037/11, DATED: 22-03-2011	DATE STARTED	09.02.2011	DATE COMPLETED		CONSTRUCTION OF NEW 380/132/13.8KV S/S*9027	CONTRACT NO.	INDEX	PLANT NO.	DRAWING NUMBER	REV. NO.
REV. NO.	DATE	DESCRIPTION	CPRG. DEPT.		ENG. DEPT.		RIYADH SAUDI ARABIA	1-1031018.01	P	C257	CD-181242	03

1	2	3	4	5	6	7	8	9	10
	CIRCUIT BREAKER (SF6)	21		DISTANCE RELAY	87T		TRANSFORMER OVERALL BIAS DIFFERENTIAL RELAY		
	MOTORIZED DISCONNECT SWITCH	25		SYNCHRO CHECK RELAY	87B		BUSBAR DIFFERENTIAL HIGH IMPEDANCE RELAY		
	MOTORIZED EARTHING SWITCH	27TC		TRIP CIRCUIT SUPERVISION RELAY	87PW		PILOT WIRE DIFFERENTIAL RELAY		
	CAPACITANCE VOLTAGE TRANSFORMER	50BF		BREAKER FAILURE RELAY	50PW		INSTANTANEOUS OVER CURRENT RELAY		
	CURRENT TRANSFORMER	5IN		STANDBY E/F RELAY	95PW		PILOT CIRCUIT SUPERVISION RELAY		
	BUS DUCT SF6	50/5IP		TRANSFORMER HV O/C INST./IDMT. RELAY	98PW		DESTABILISING RELAY		
	THREE WINDING GENERATOR TRANSFORMER	5IS		TRANSFORMER LV O/C & E/F IDMT. RELAY	49		THERMAL OVERLOAD		
	HIGH SPEED MOTORIZED EARTH SWITCH	64NP		TRANSFORMER HV REF RELAY	90		VOLTAGE REGULATING RELAY		
	FUTURE LINE	64NS		TRANSFORMER LV REF RELAY	95		CT SUPERVISION RELAY		
	POTENTIAL TRANSFORMER	67N		DIRECTIONAL E/F RELAY	23		TRANSFORMER COOLER FAIL		
	SURGE ARRESTER (OUTDOOR TYPE)	81		UNDER FREQUENCY RELAY	260-1		MAIN TRANSFORMER OIL TEMPERATURE HIGH STAGE-1		
	SURGE ARRESTER (GIS TYPE)	87CP		CONNECTION DIFFERENTIAL HIGH IMPEDANCE RELAY	260-2		MAIN TRANSFORMER OIL TEMPERATURE HIGH STAGE-2		
	SF6/AIR BUSHING	87BD		BUSDUCT DIFFERENTIAL HIGH IMPEDANCE RELAY	26S		FIRE PROTECTION OPERATED (SERGI)		
	SF6/OIL INTERFACE ENCLOSURE OF SGT	87T		TRANSFORMER DIFFERENTIAL HIGH IMPEDANCE RELAY	49WG		WINDING TEMPERATURE ALARM		
	SF6/OIL BUSHING OF GT				49T		WINDING TEMPERATURE TRIP		
	U/G CABLE HEAD				630H-1		MAIN TANK OIL LEVEL HIGH		
					630H-2		OLTC TANK OIL LEVEL HIGH		

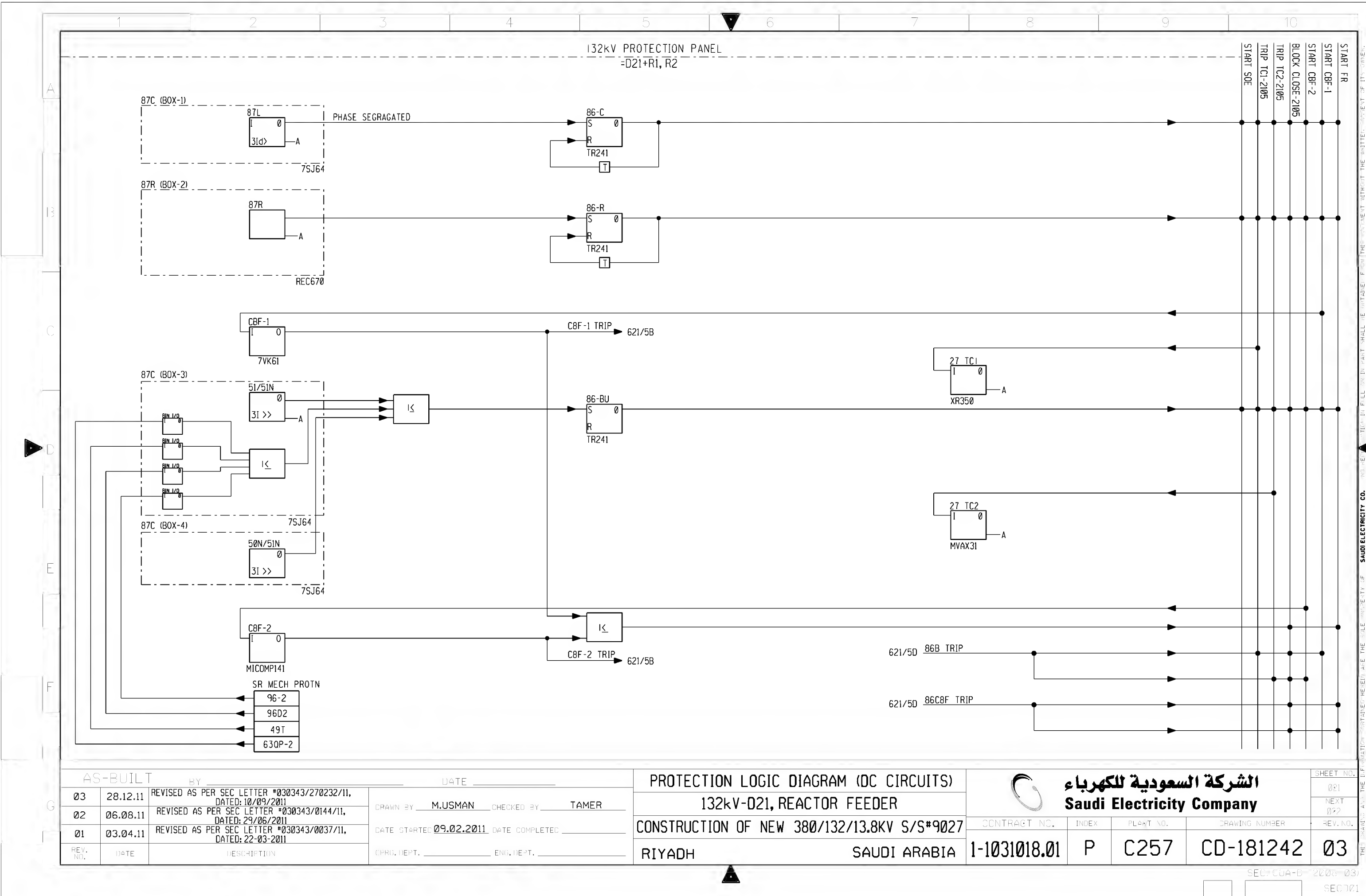
AS-BUILT			BY		DATE		NOMENCLATURE FOR DEVICES		<div> الشركة السعودية للكهرباء Saudi Electricity Company</div>				SHEET NO.
03	28.12.11	REVISED AS PER SEC LETTER #030343/270232/11, DATED: 10/09/2011	DRAWN BY: M.USMAN		CHECKED BY: TAMER		RELAY & EQUIPMENTS USED FOR 132kV		CONSTRUCTION OF NEW 380/132/13.8KV S/S*9027				002
02	06.08.11	REVISED AS PER SEC LETTER #030343/0144/11, DATED: 29/06/2011	DATE STARTED 09.02.2011		DATE COMPLETED		CONSTRUCTION OF NEW 380/132/13.8KV S/S*9027						NEXT
01	03.04.11	REVISED AS PER SEC LETTER #030343/0037/11, DATED: 22-03-2011	CARG. DEPT.		ENG. DEPT.		CONSTRUCTION OF NEW 380/132/13.8KV S/S*9027						023
REV. NO.	DATE	DESCRIPTION					RIYADH SAUDI ARABIA		1-1031018.01	P	C257	CD-181242	03

1	2	3	4	5	6	7	8	9	10
A		630L-1	MAIN TANK OIL LEVEL LOW		V	VOLTMETER			
		630L-2	OLTC TANK OIL LEVEL LOW		A	AMMETER			
		630P-1	TAP CHANGER PROTECTIVE DEVICE ALARM						
B		630P-2	TAP CHANGER PROTECTIVE DEVICE TRIP		W	WATTMETER			
		63	RAPID PRESSURE		VAR	VARMETER			
		96-1	BUCHHOLZ GAS ALARM						
C		96-2	BUCHHOLZ SURGE TRIP		WH	ENERGY METER			
		960-1	BURST PLATE BREAKING DEVICE MAIN TANK		A =	AMPERE TRANSDUCER			
		960-2	BURST PLATE BREAKING DEVICE OLTC TANK		V =	VOLTAGE TRANSDUCER			
D		86	TRIP RELAY ELECTRIC/HAND RESET		W =	WATT TRANSDUCER			
		86B	BUS BAR PROTECTION TRIP RELAY		VAR =	VAR TRANSDUCER			
E		86T	TRANSFORMER HV TRIP RELAY		&	AND GATE			
		94T	TRANSFORMER LV TRIP RELAY		I ≤	OR GATE			
F		94	TRIP RELAY SELF RESET		VS	VOLTAGE SELECTOR SWITCH			
		DIODE	DIODE		AS	AMMETER SLECTOR SWITCH			

AS-BUILT			BY	DATE	NOMENCLATURE FOR DEVICES		 الشركة السعودية للكهرباء Saudi Electricity Company				SHEET NO.		
03	28.12.11	REVISED AS PER SEC LETTER #030343/270232/11, DATED: 10/09/2011			RELAY & EQUIPMENTS USED FOR 132kV						003		
02	06.08.11	REVISED AS PER SEC LETTER #030343/0144/11, DATED: 29/06/2011	DRAWN BY	M.USMAN	CHECKED BY	TAMER	CONSTRUCTION OF NEW 380/132/13.8KV S/S#9027		CONTRACT NO.	INDEX	PLANT NO.	DRAWING NUMBER	NEXT 020
01	03.04.11	REVISED AS PER SEC LETTER #030343/0037/11, DATED: 22-03-2011	DATE STARTED:	09.02.2011	DATE COMPLETED:		RIYADH SAUDI ARABIA		1-1031018.01	P	C257	CD-181242	REV. NO.
REV. NO.	DATE	DESCRIPTION	CPRG. DEPT.		ENG. DEPT.								03



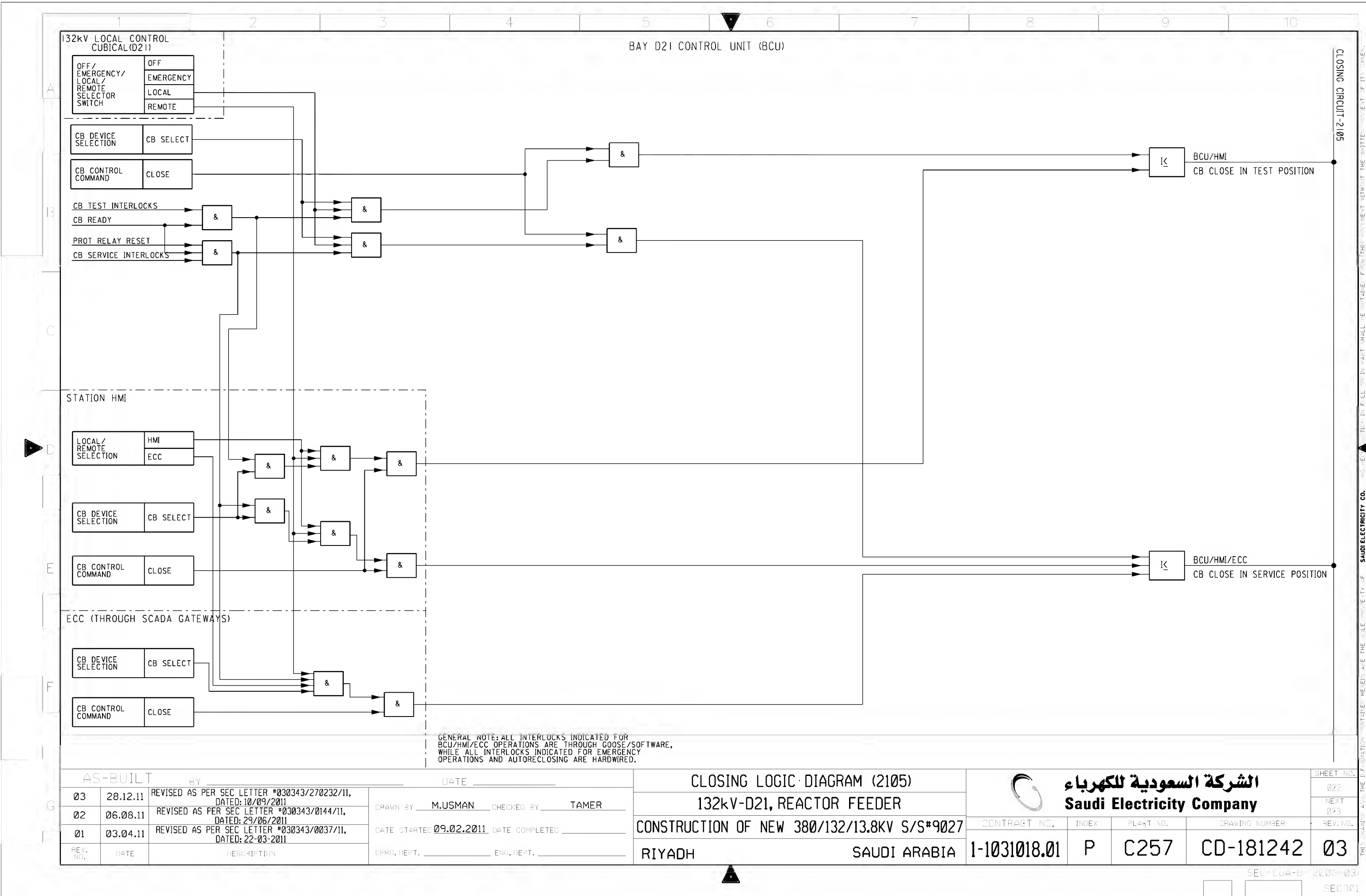
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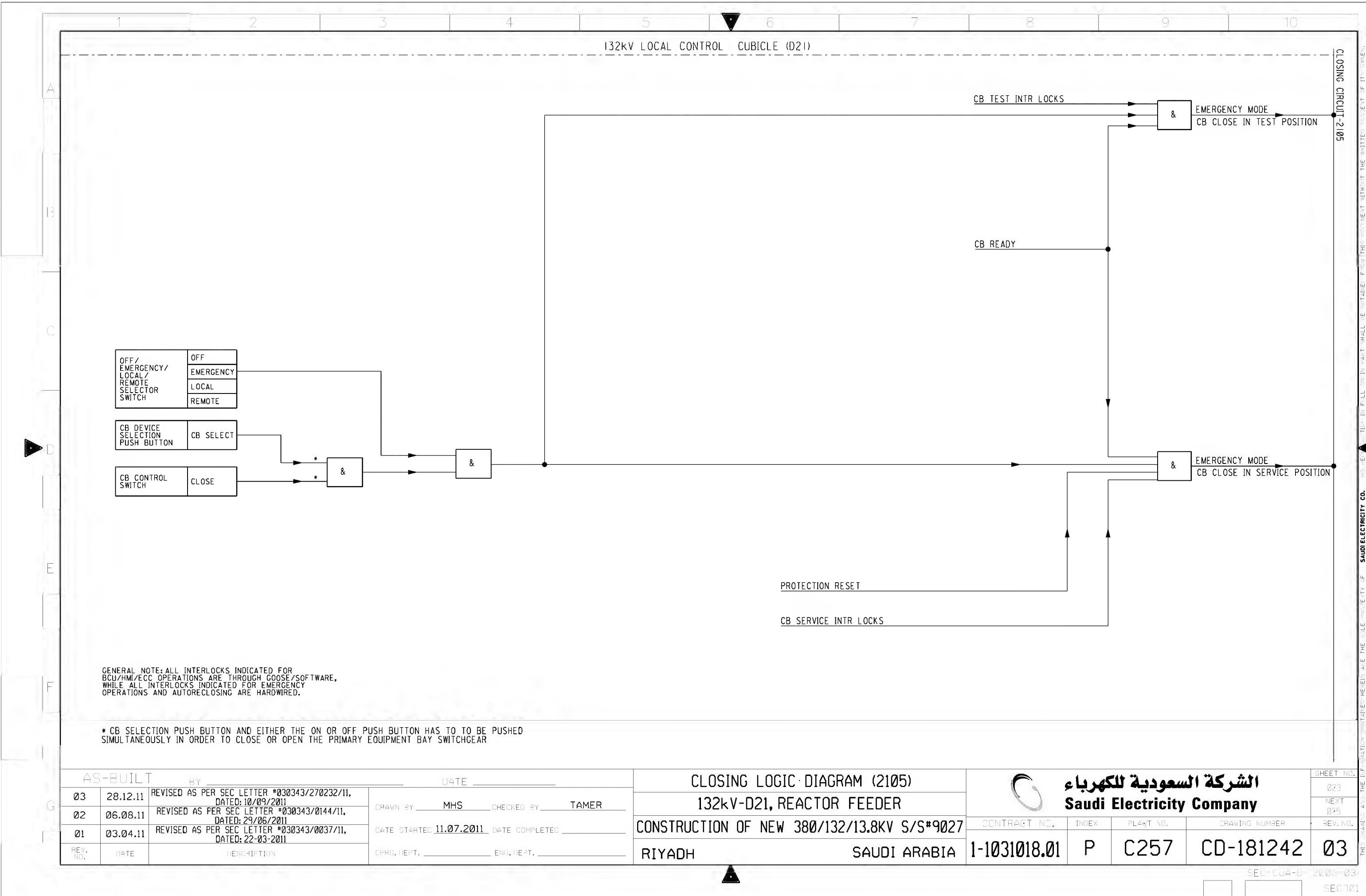


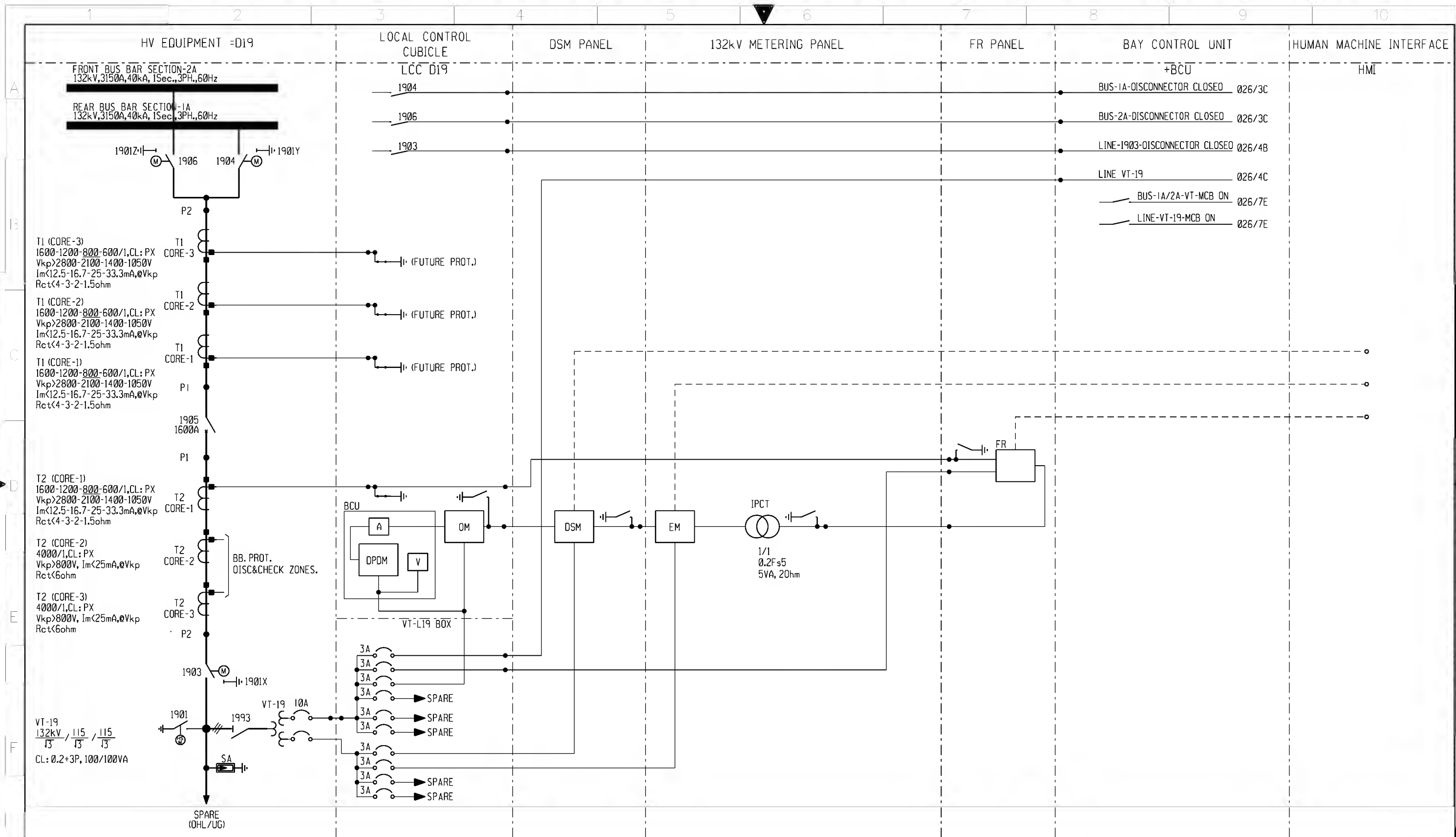
AS-BUILT			DATE	
03	28.12.11	REVISED AS PER SEC LETTER #030343/270232/11, DATED: 10/09/2011	DRAWN BY	M.USMAN
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01	03.04.11	REVISED AS PER SEC LETTER #030343/0037/11, DATED: 22-03-2011	DATE STARTED	09.02.2011
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PROTECTION LOGIC DIAGRAM (DC CIRCUITS)	
132kV-D21, REACTOR FEEDER	
CONSTRUCTION OF NEW 380/132/13.8KV S/S#9027	
RIYADH SAUDI ARABIA	

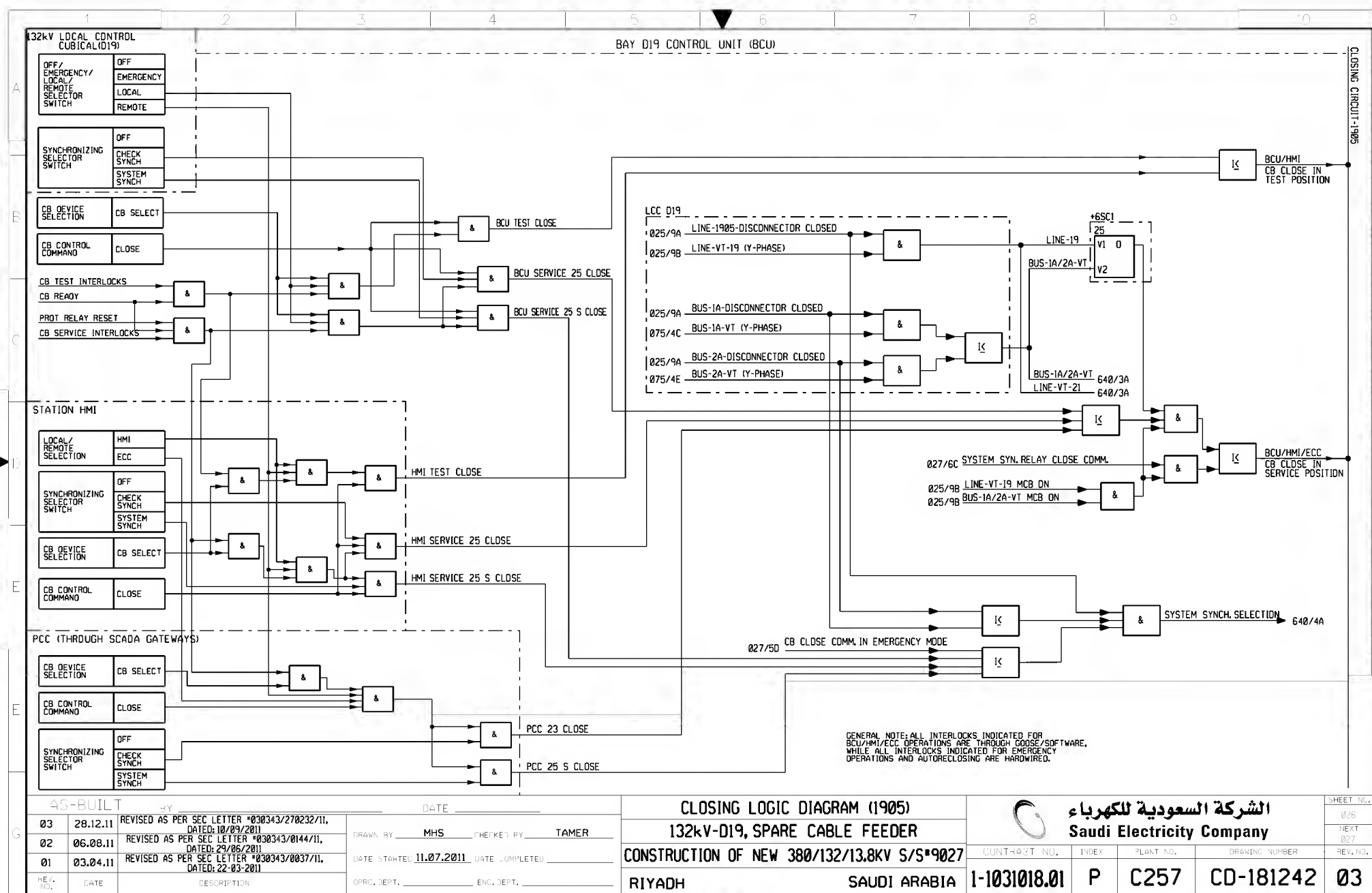
الشركة السعودية للكهرباء Saudi Electricity Company					SHEET NO.
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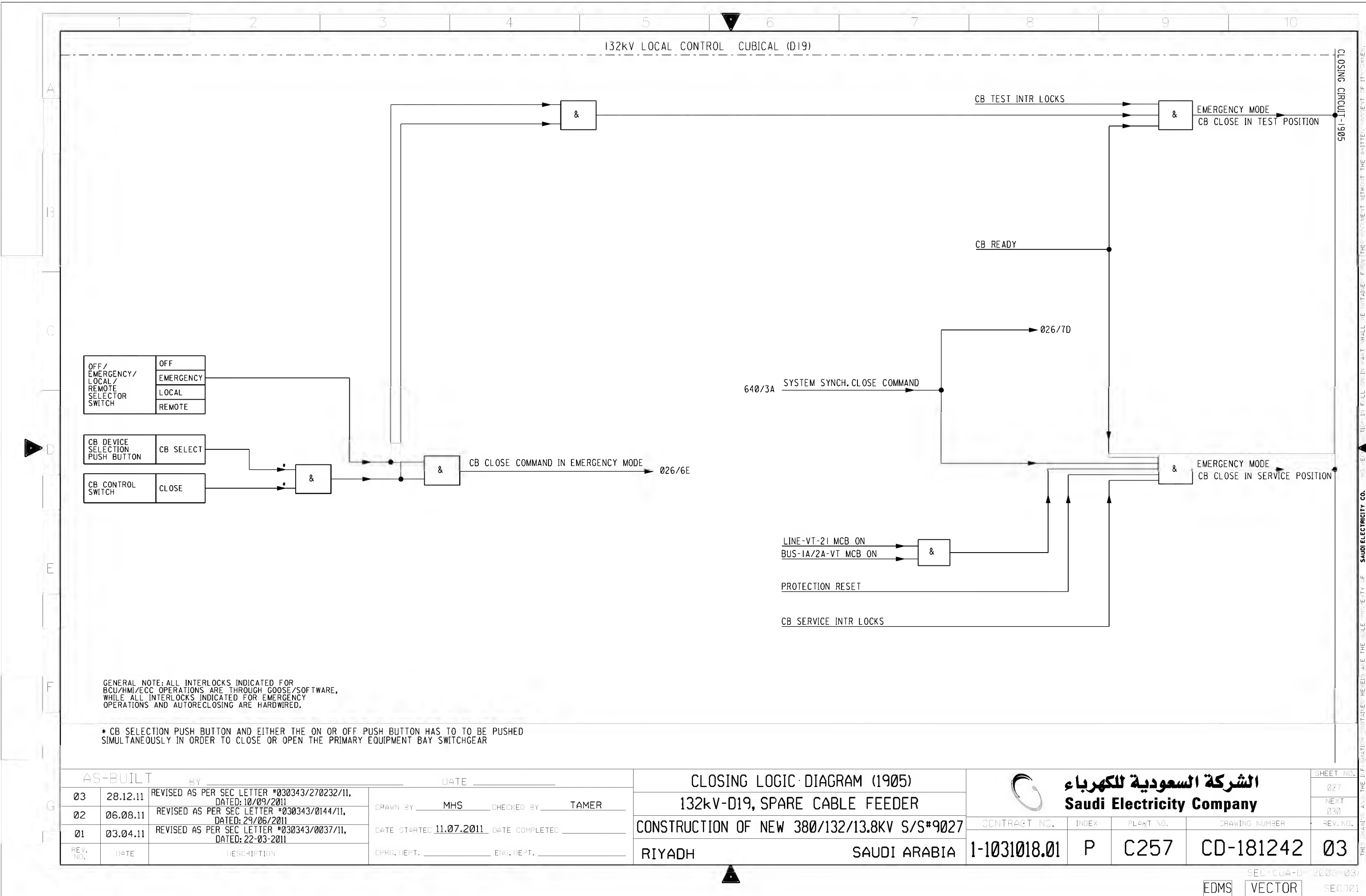




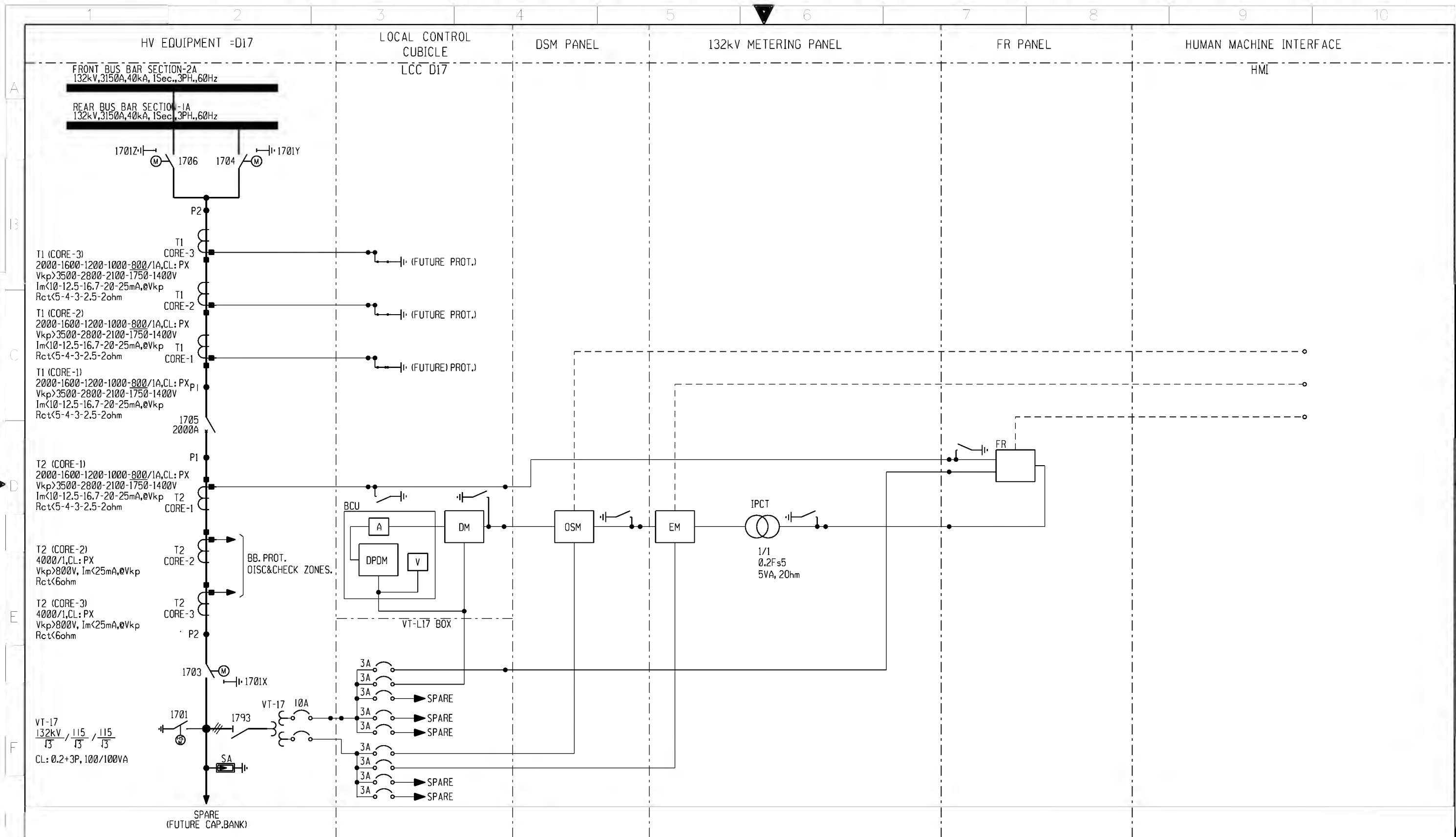


AS-BUILT			DATE		PROTECTION LOGIC DIAGRAM (AC CIRCUITS)		الشركة السعودية للكهرباء		SHEET NO.	
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02	06.08.11	REVISED AS PER SEC LETTER #030343/0144/11, DATED: 29/06/2011	DATE STARTED 09.02.2011		DATE COMPLETED		CONSTRUCTION OF NEW 380/132/13.8KV S/S#9027		026	027
01	03.04.11	REVISED AS PER SEC LETTER #030343/0037/11, DATED: 22-03-2011	CPRG. DEPT.		ENG. DEPT.		SAUDI ARABIA		027	028
REV. NO.	DATE	DESCRIPTION	CPRG. DEPT.		ENG. DEPT.		SAUDI ARABIA		028	029

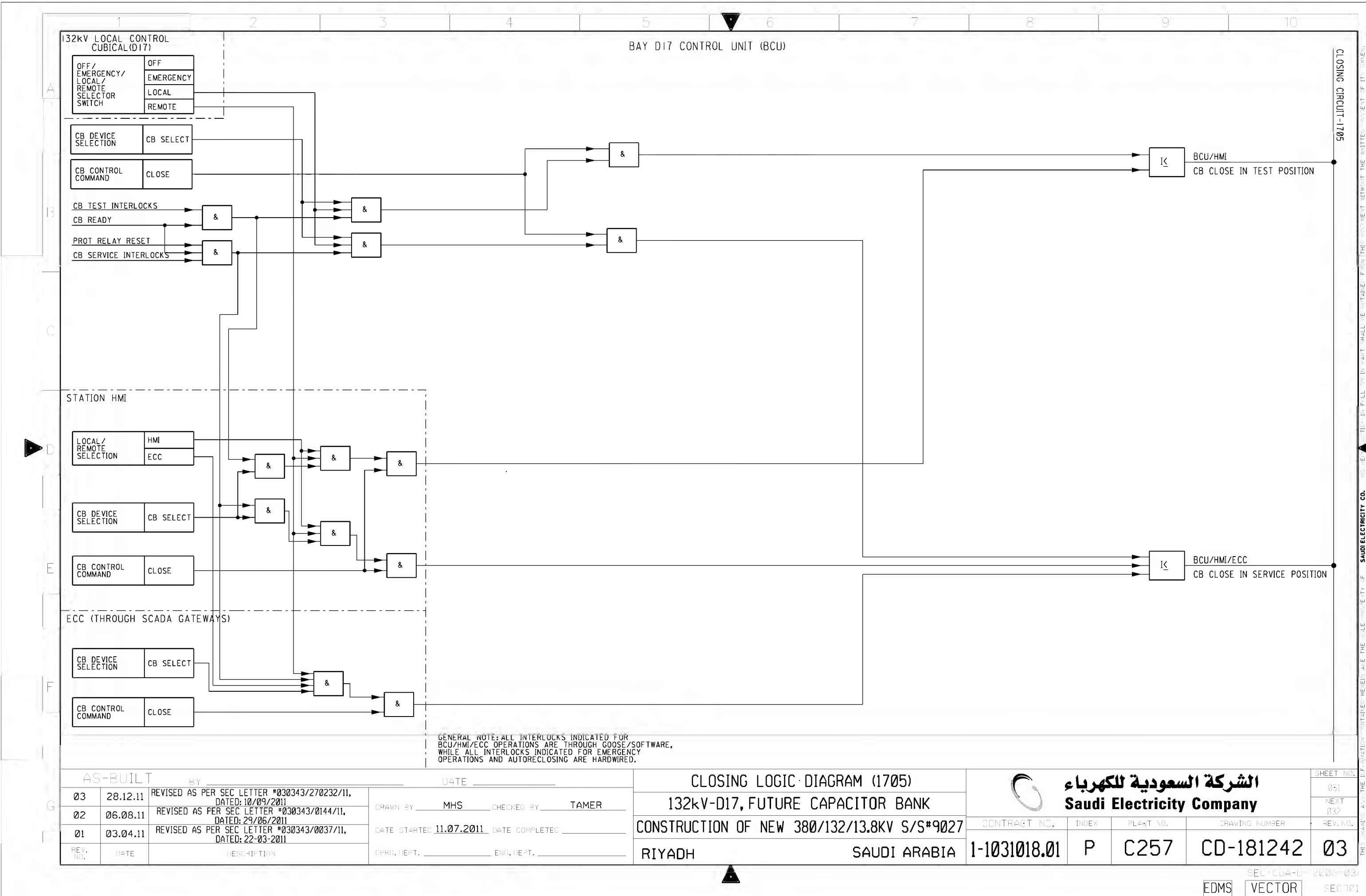


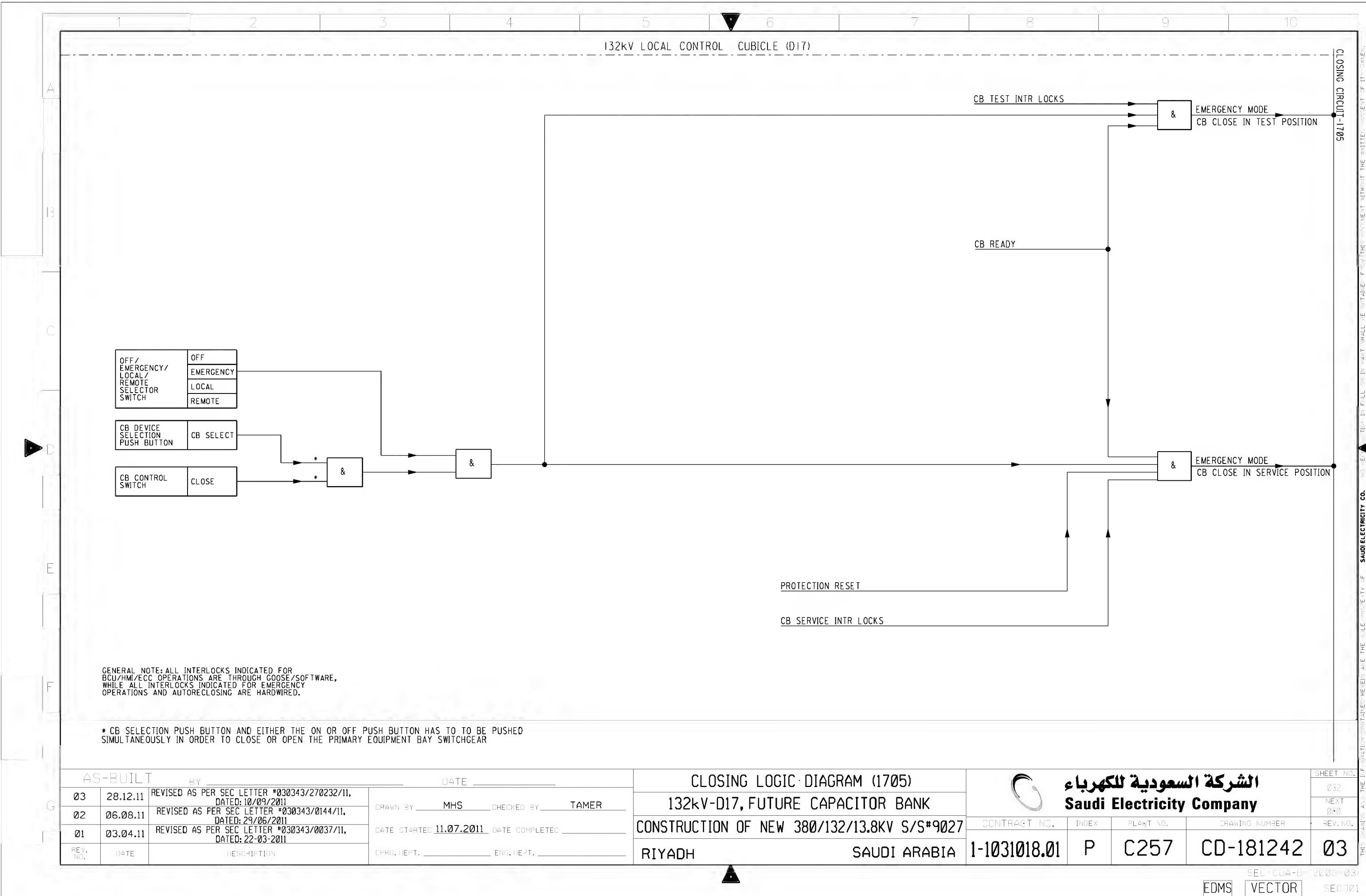


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AS-BUILT			DATE		PROTECTION LOGIC DIAGRAM (AC CIRCUITS)		الشركة السعودية للكهرباء		SHEET NO.	
03	28.12.11	REVISED AS PER SEC LETTER #030343/270232/11, DATED: 10/09/2011	DRAWN BY	M.USMAN	CHECKED BY	TAMER	Saudi Electricity Company		030	030
02	06.08.11	REVISED AS PER SEC LETTER #030343/0144/11, DATED: 29/06/2011	DATE STARTED 09.02.2011		DATE COMPLETED		CONSTRUCTION OF NEW 380/132/13.8KV S/S#9027		031	031
01	03.04.11	REVISED AS PER SEC LETTER #030343/0037/11, DATED: 22-03-2011	CPRG. DEPT.		ENG. DEPT.		CONTRACT NO.		032	032
REV. NO.	DATE	DESCRIPTION	SAUDI ARABIA		SAUDI ARABIA		INDEX		033	033
			RIYADH		SAUDI ARABIA		PLANT NO.		034	034
							DRAWING NUMBER		035	035
							CD-181242		036	036
							REV. NO.		037	037
							03		038	038

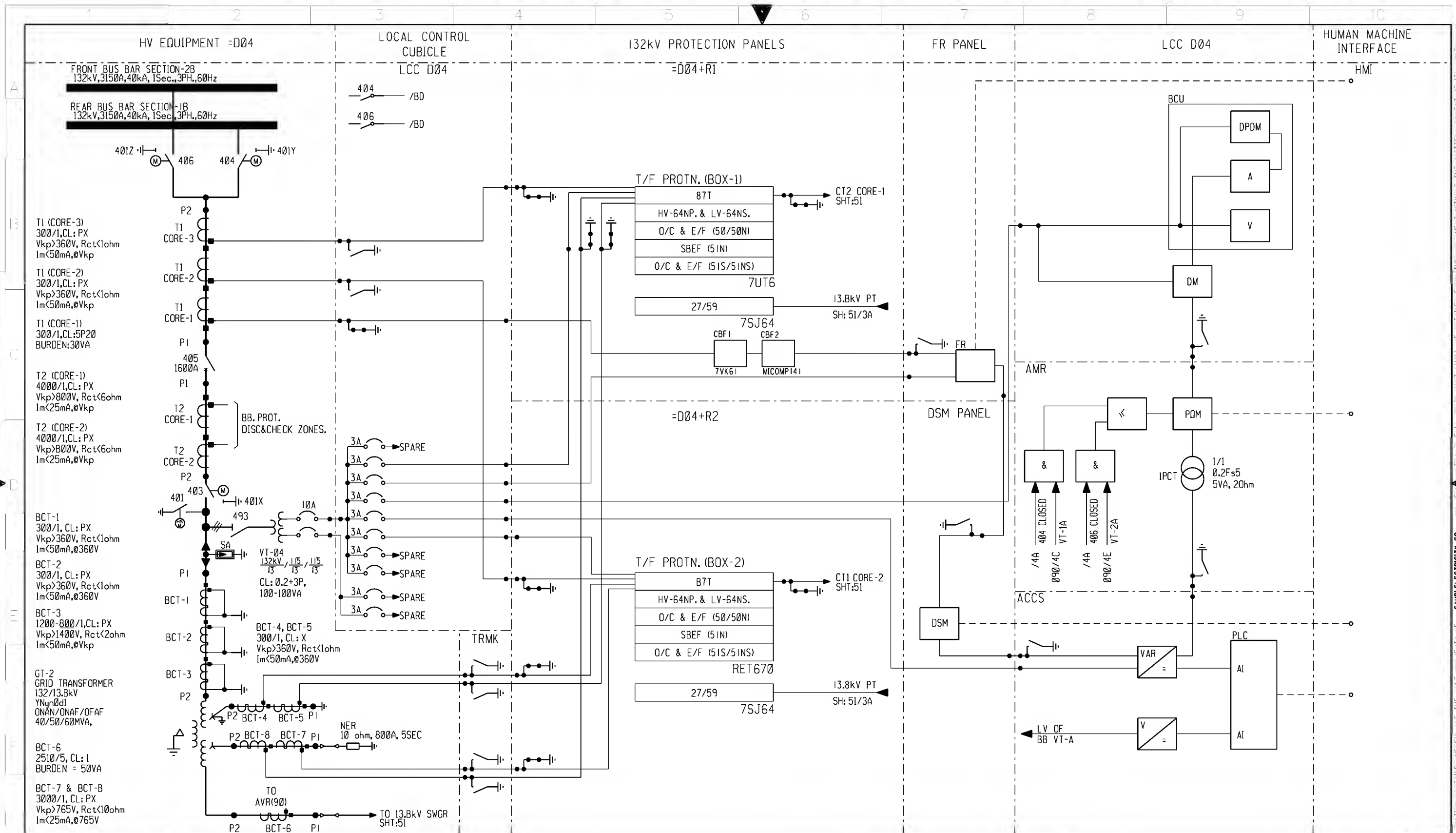




AS-BUILT			BY	DATE
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01	03.04.11	REVISED AS PER SEC LETTER #030343/0037/11, DATED: 22-03-2011	DATE STARTED	11.07.2011 DATE COMPLETED
REV. NO.	DATE	DESCRIPTION	CRPG. DEPT.	ENG. DEPT.

CLOSING LOGIC DIAGRAM (1705)	
132kV-D17, FUTURE CAPACITOR BANK	
CONSTRUCTION OF NEW 380/132/13.8KV S/S#9027	
RIYADH SAUDI ARABIA	

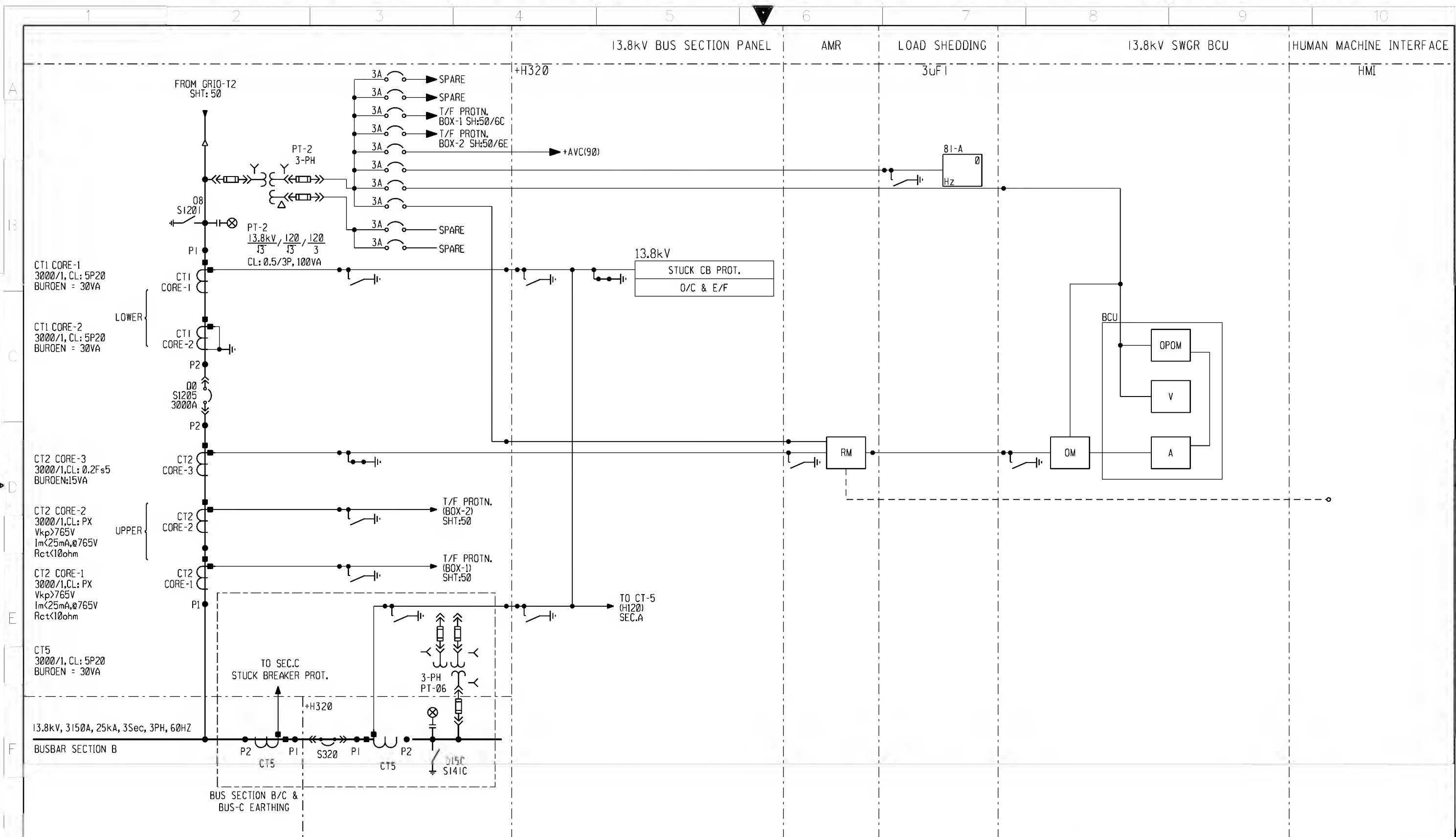
الشركة السعودية للكهرباء Saudi Electricity Company				
CONTRACT NO.	INDEX	PLANT NO.	DRAWING NUMBER	REV. NO.
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03	28.12.11	REVISED AS PER SEC LETTER #030343/270232/11, DATED: 10/09/2011	DRAWN BY M.USMAN CHECKED BY TAMER		132kV-D04, GRID TRANSFORMER-2		Saudi Electricity Company		052	
02	06.08.11	REVISED AS PER SEC LETTER #030343/0144/11, DATED: 29/06/2011	DATE STARTED 09.02.2011 DATE COMPLETED		CONSTRUCTION OF NEW 380/132/13.8KV S/S#9027		CONTRACT NO.		NEXT	
01	03.04.11	REVISED AS PER SEC LETTER #030343/0037/11, DATED: 22-03-2011	CPRG. DEPT. _____ ENG. DEPT. _____		RIYADH SAUDI ARABIA		INDEX		051	
REV. NO.	DATE	DESCRIPTION					PLANT NO.	DRAWING NUMBER	REV. NO.	
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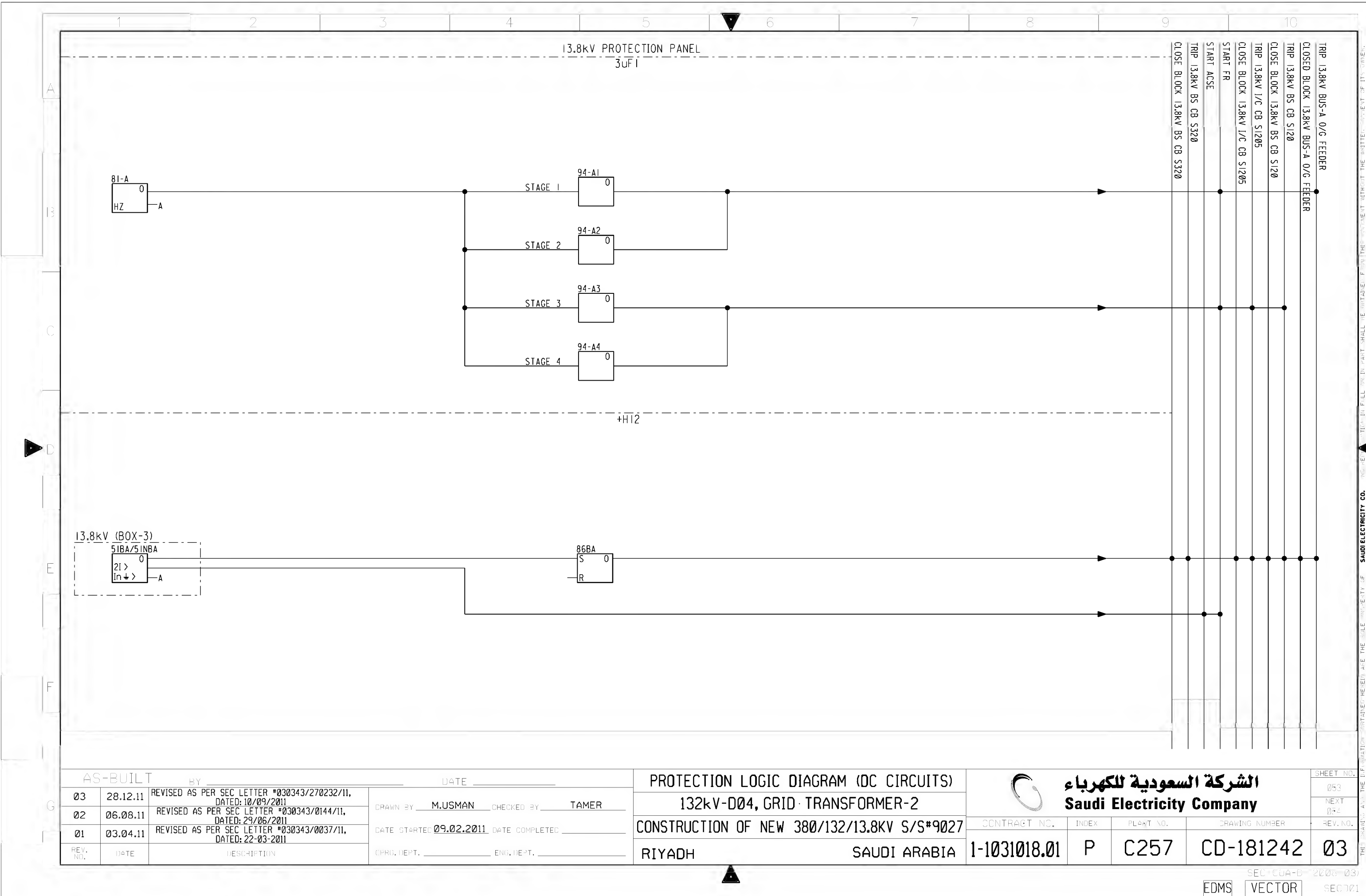
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AS-BUILT			BY _____ DATE _____		PROTECTION LOGIC DIAGRAM (AC CIRCUITS)		 الشركة السعودية للكهرباء Saudi Electricity Company				SHEET NO.	
03	28.12.11	REVISED AS PER SEC LETTER #030343/270232/11, DATED: 10/09/2011	DRAWN BY: M.USMAN CHECKED BY: TAMER	DATE STARTED: 09.02.2011 DATE COMPLETED: _____	132kV-D04, GRID TRANSFORMER-2			CONTRACT NO.	INDEX	PLANT NO.	DRAWING NUMBER	03
02	06.08.11	REVISED AS PER SEC LETTER #030343/0144/11, DATED: 29/06/2011			CONSTRUCTION OF NEW 380/132/13.8KV S/S#9027							NEXT
01	03.04.11	REVISED AS PER SEC LETTER #030343/0037/11, DATED: 22-03-2011			RIYADH SAUDI ARABIA							03
REV. NO.	DATE	DESCRIPTION	CHRG. DEPT.	ENG. DEPT.								

SEC-CUA-B-2008-031

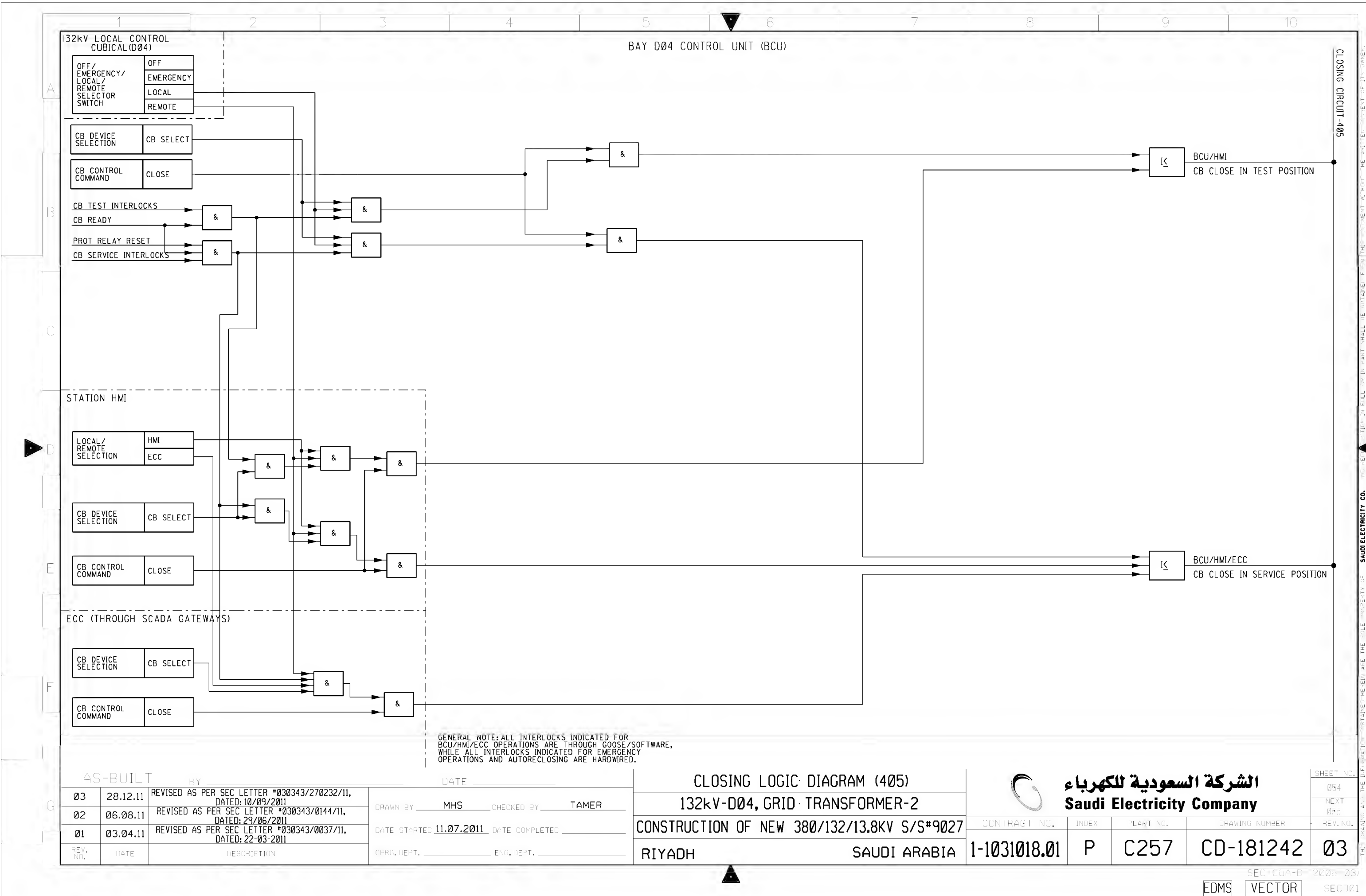
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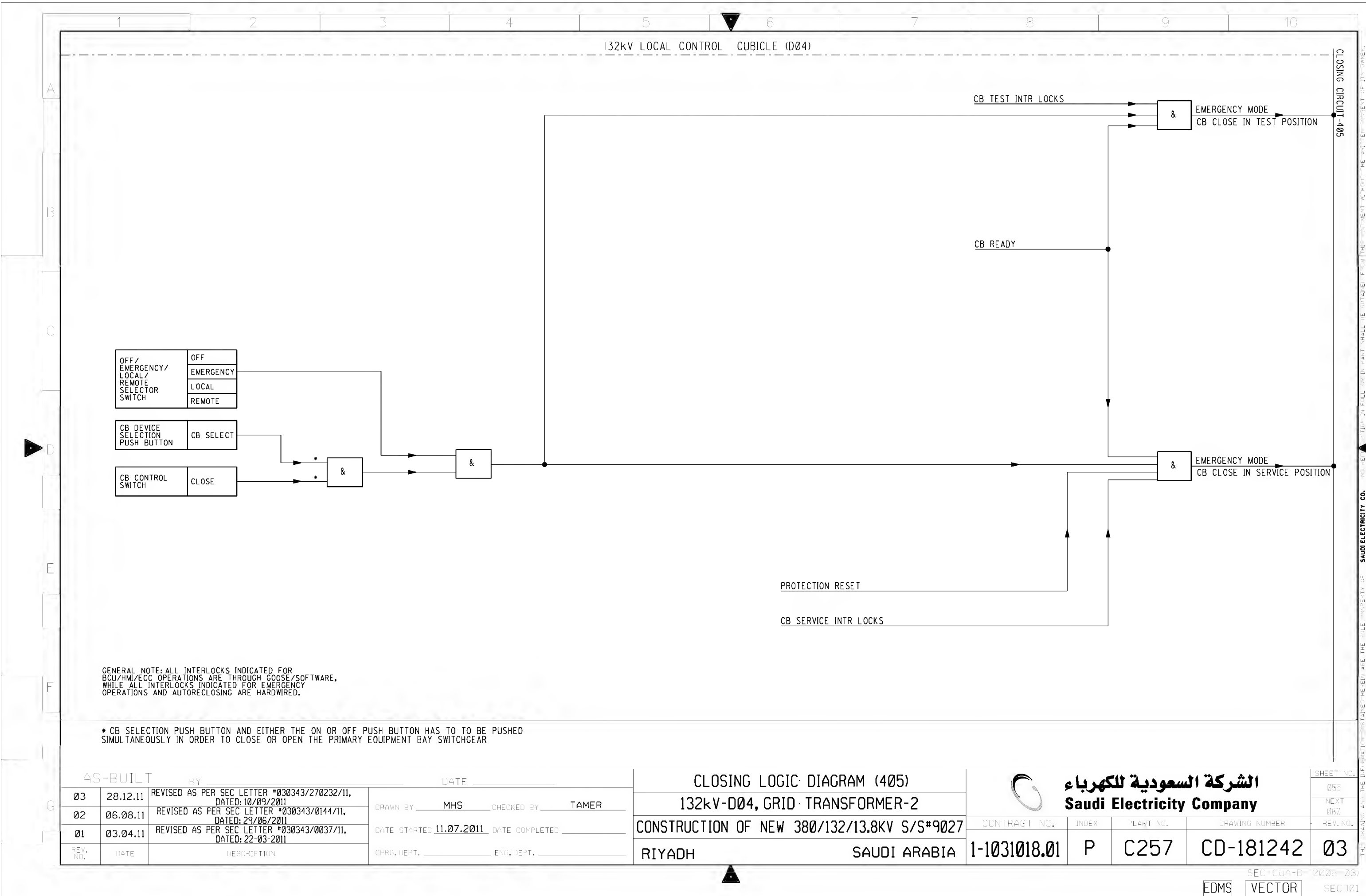


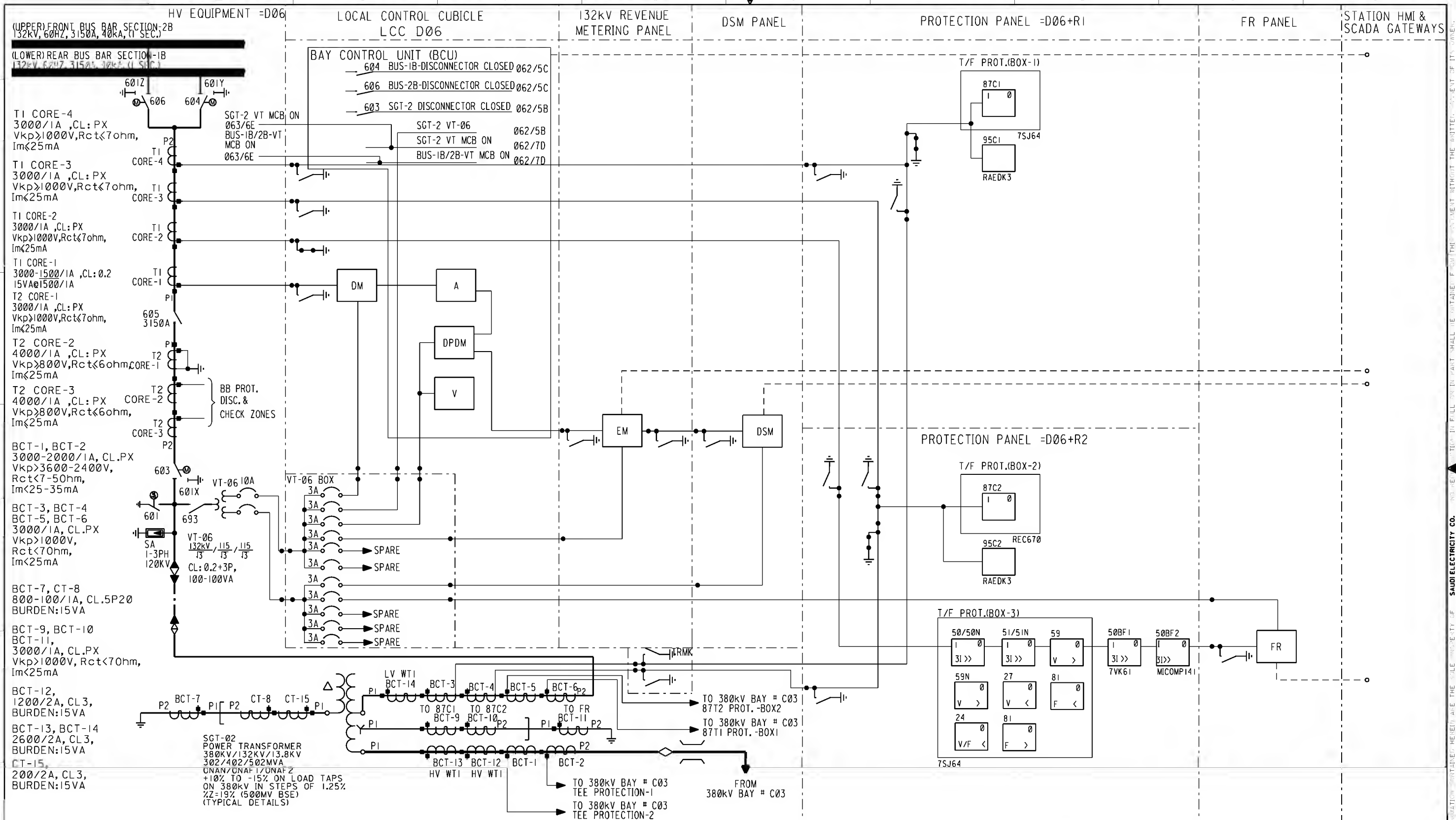
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03	28.12.11	REVISED AS PER SEC LETTER #030343/270232/11, DATED: 10/09/2011	DRAWN BY <u>M.USMAN</u> CHECKED BY <u>TAMER</u>	DATE STARTED <u>09.02.2011</u> DATE COMPLETED _____
02	06.08.11	REVISED AS PER SEC LETTER #030343/0144/11, DATED: 29/06/2011		
01	03.04.11	REVISED AS PER SEC LETTER #030343/0037/11, DATED: 22-03-2011		
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PROTECTION LOGIC DIAGRAM (DC CIRCUITS)	
132kV-D04, GRID TRANSFORMER-2	
CONSTRUCTION OF NEW 380/132/13.8KV S/S#9027	
RIYADH SAUDI ARABIA	

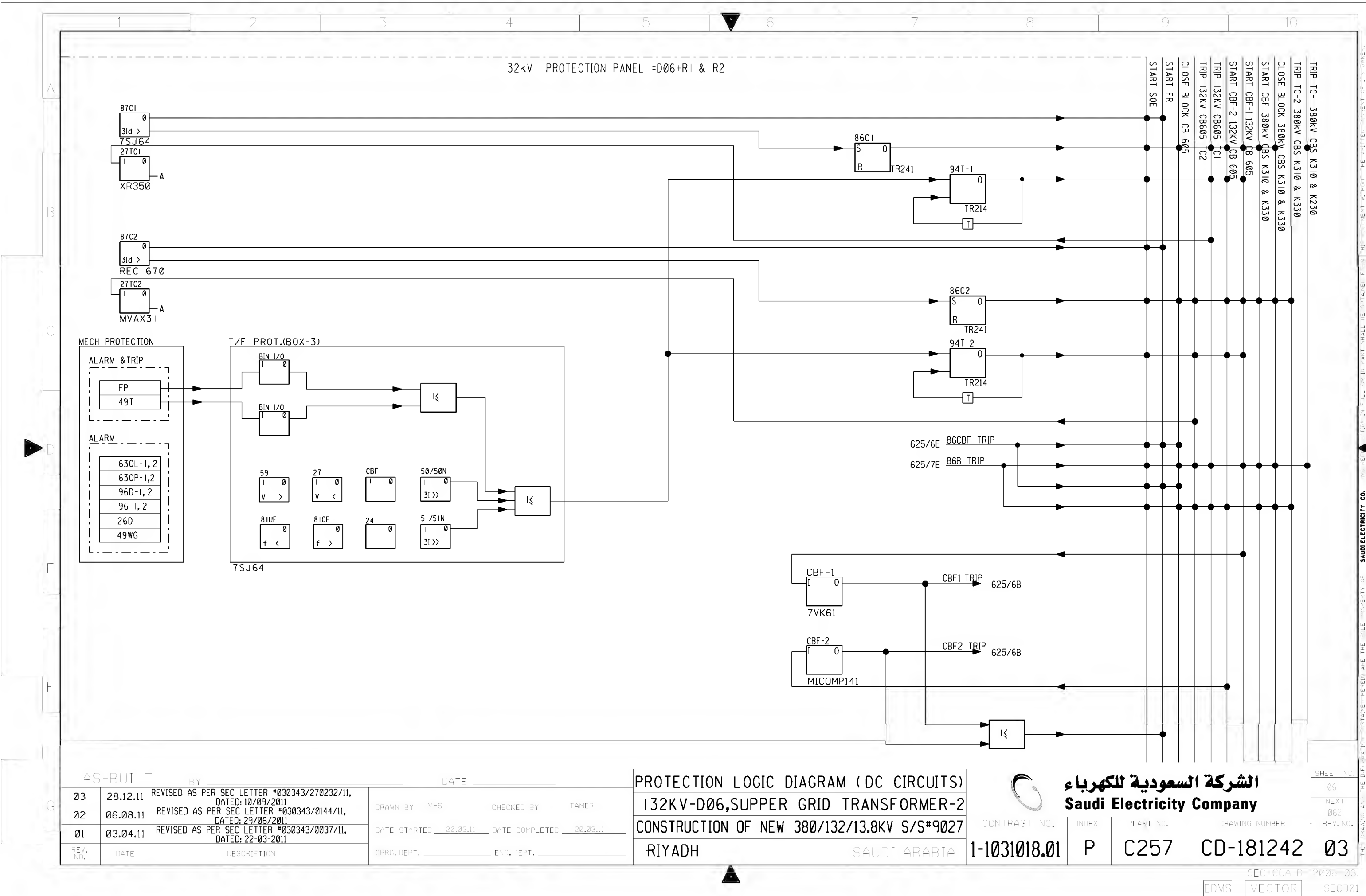
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					053
					NEXT 054
CONTRACT NO.	INDEX	PLANT NO.	DRAWING NUMBER		REV. NO.
1-1031018.01	P	C257	CD-181242		03





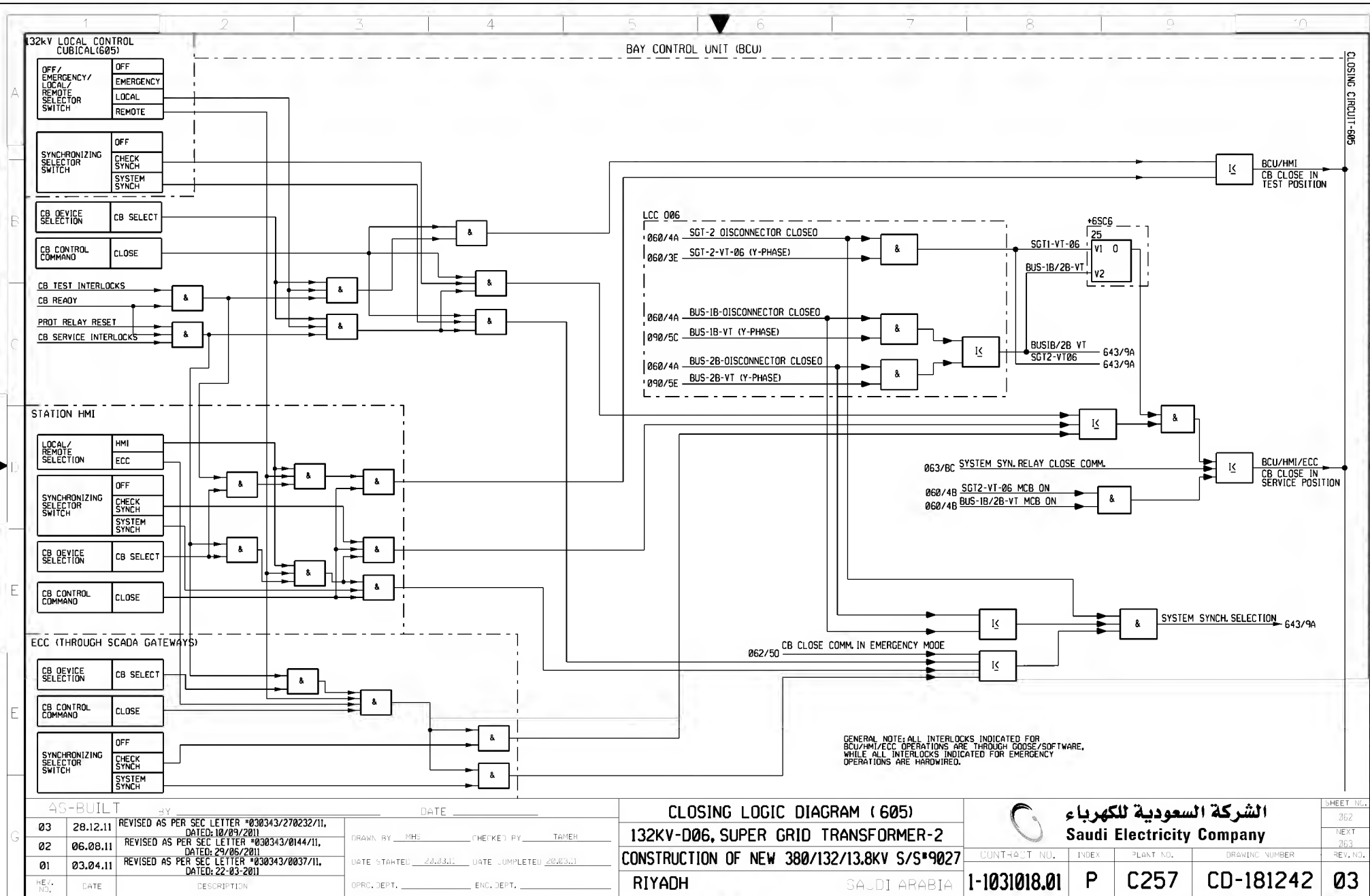


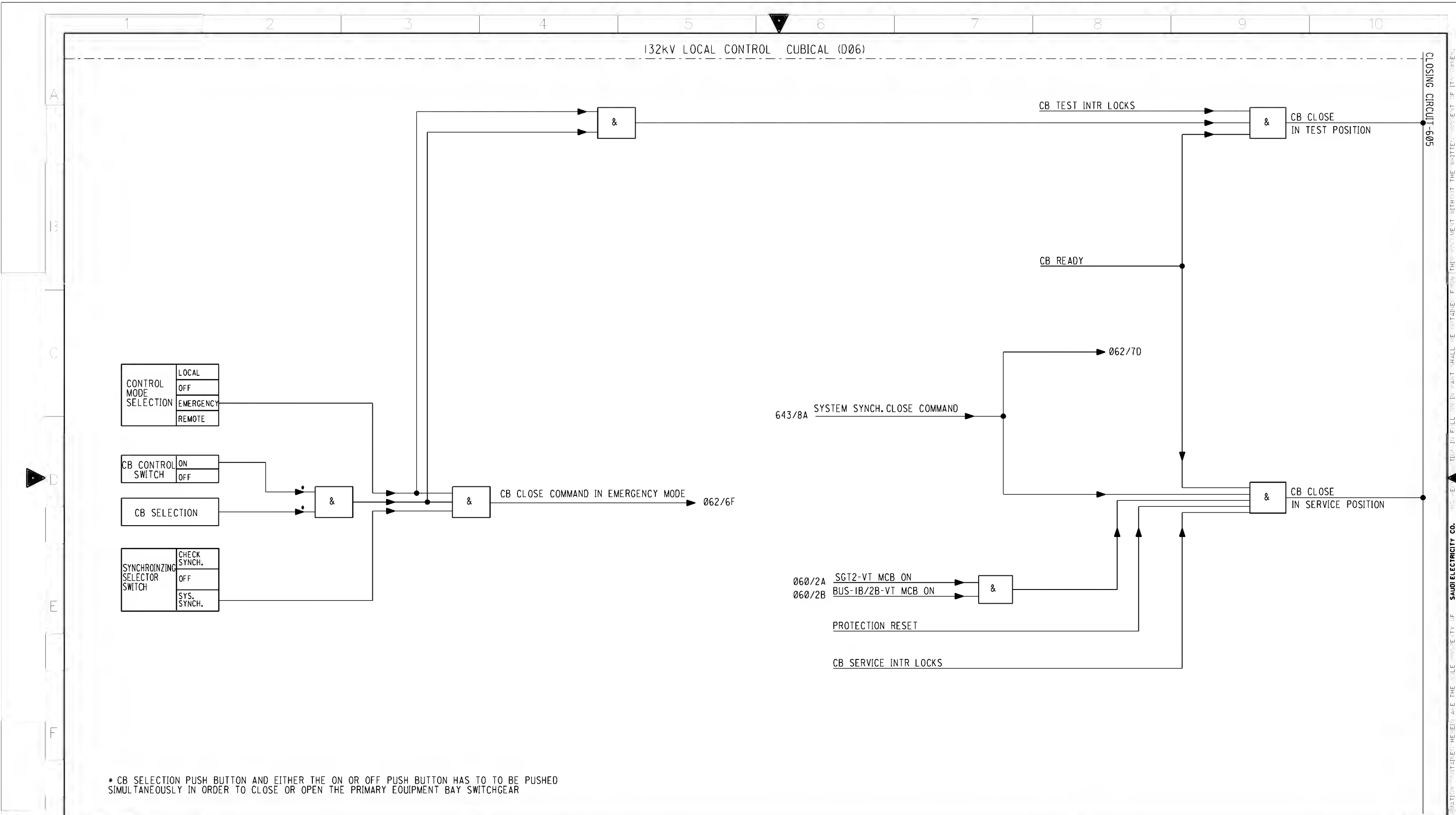


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02	06.08.11	REVISED AS PER SEC LETTER #030343/0144/11, DATED: 29/06/2011	DATE STARTED	20.03.11	DATE COMPLETED	20.03.11	CONSTRUCTION OF NEW 380/132/13.8KV S/S#9027		08	REV. NO.
01	03.04.11	REVISED AS PER SEC LETTER #030343/0037/11, DATED: 22-03-2011	DATE STARTED	20.03.11	DATE COMPLETED	20.03.11	RIYADH SAUDI ARABIA		03	
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							1-1031018.01	P	C257	CD-181242



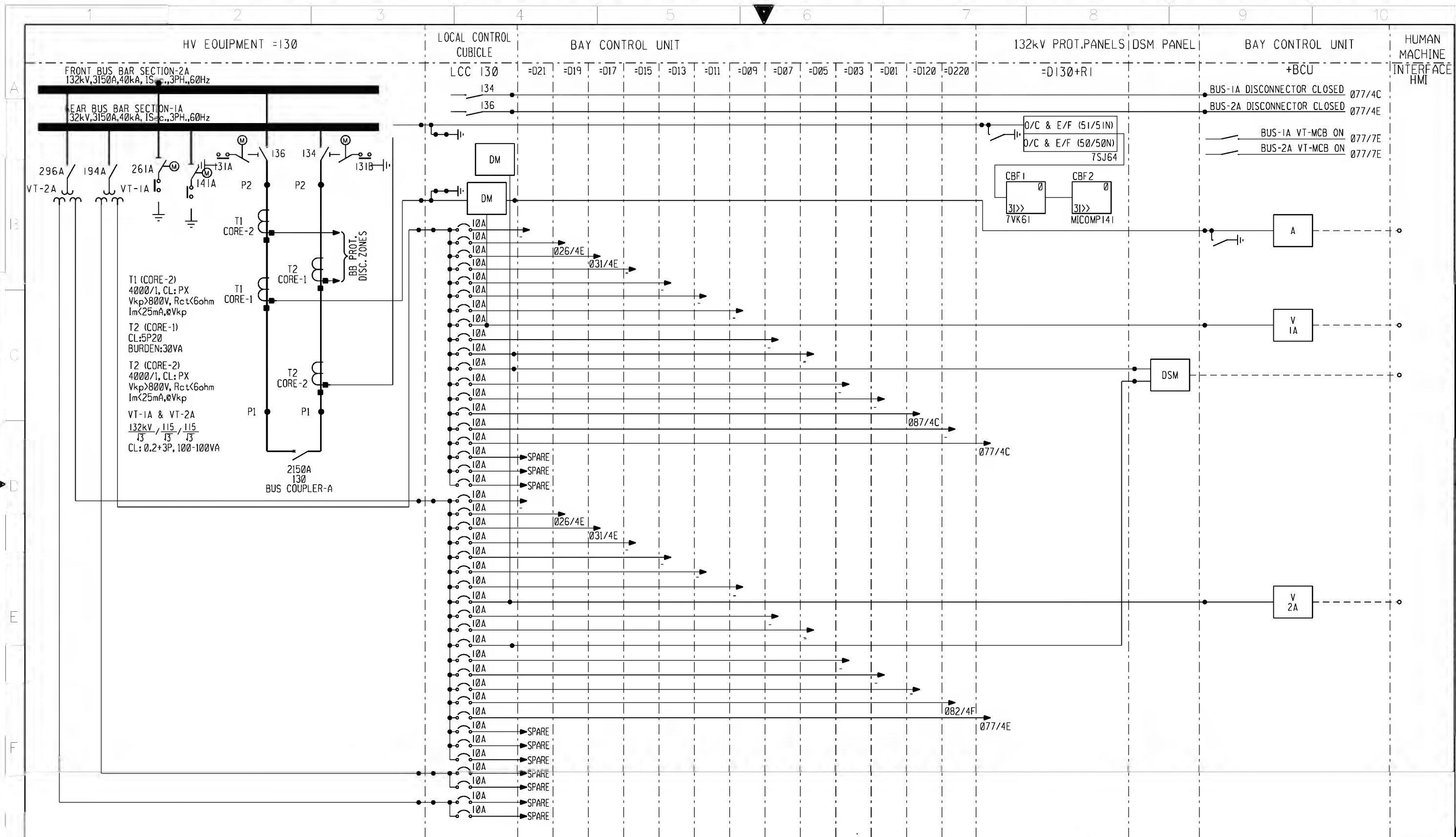
AS-BUILT			BY _____		DATE _____		PROTECTION LOGIC DIAGRAM (DC CIRCUITS)		 الشركة السعودية للكهرباء Saudi Electricity Company				SHEET NO.	
03	28.12.11	REVISED AS PER SEC LETTER #030343/270232/11, DATED: 10/09/2011	DRAWN BY _____ VHS _____ CHECKED BY _____ TAMER _____				132KV-D06,SUPPER GRID TRANSFORMER-2			CONTRACT NO.	INDEX	PLANT NO.	DRAWING NUMBER	061
02	06.08.11	REVISED AS PER SEC LETTER #030343/0144/11, DATED: 29/06/2011					CONSTRUCTION OF NEW 380/132/13.8KV S/S#9027							NEXT
01	03.04.11	REVISED AS PER SEC LETTER #030343/0037/11, DATED: 22-03-2011	DATE STARTED _____ 20.03.11 _____ DATE COMPLETED _____ 20.03.11 _____		RIYADH		SAUDI ARABIA		1-1031018.01	P	C257	CD-181242	REV. NO.	
REV. NO.	DATE	DESCRIPTION	CPRG. DEPT. _____ ENG. DEPT. _____										03	





* CB SELECTION PUSH BUTTON AND EITHER THE ON OR OFF PUSH BUTTON HAS TO TO BE PUSHED SIMULTANEOUSLY IN ORDER TO CLOSE OR OPEN THE PRIMARY EQUIPMENT BAY SWITCHGEAR

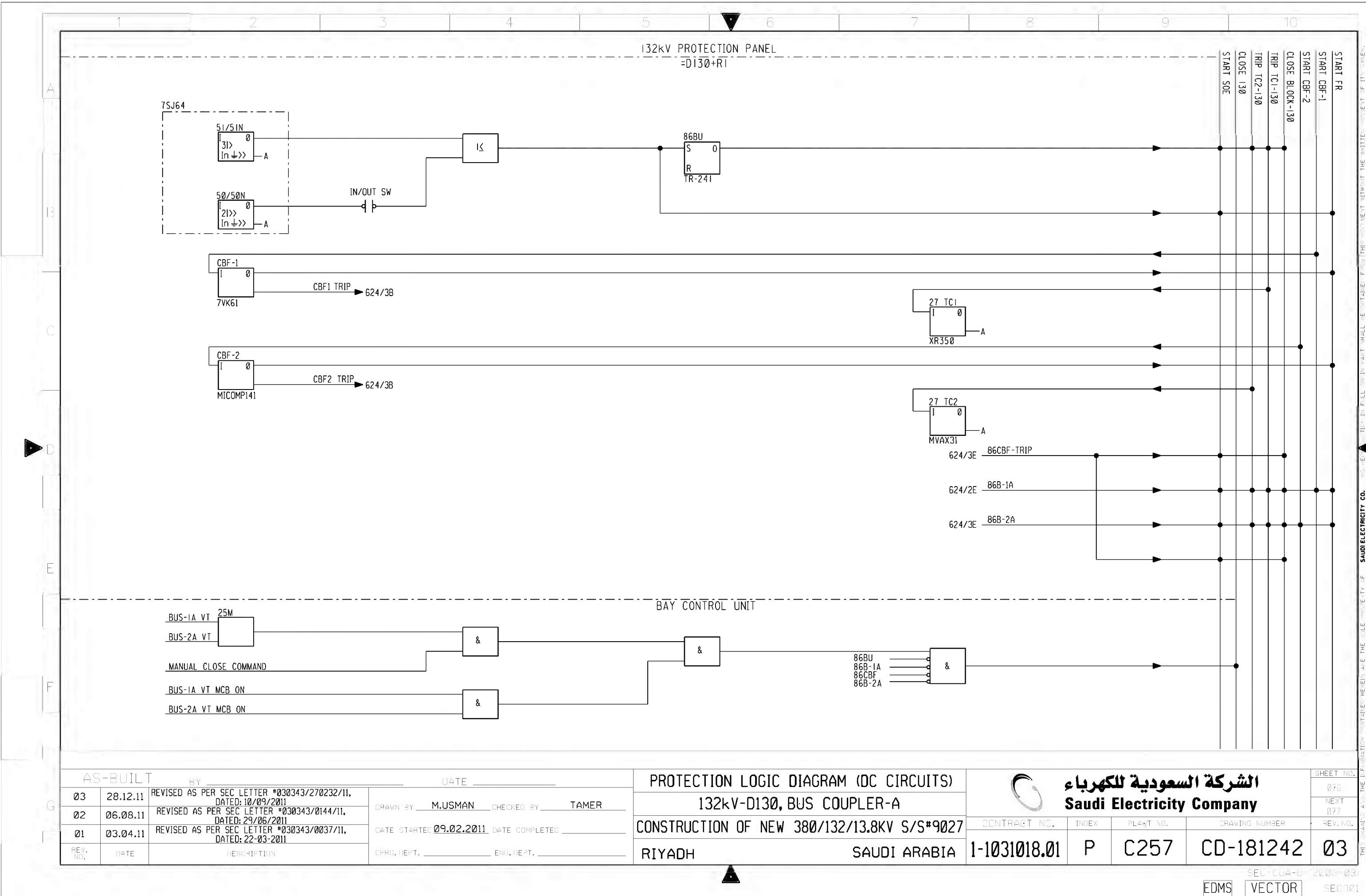
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BY _____ DATE _____				132KV-D06,SUPPER GRID TRANSFORMER-2				Saudi Electricity Company		063	
03	28.12.11	REVISED AS PER SEC LETTER #030343/270232/11, DATED: 10/09/2011	DRAWN BY VHS CHECKED BY TAMER	CONSTRUCTION OF NEW 380/132/13.8KV S/S#9027				CONTRACT NO.		NEXT	
02	06.08.11	REVISED AS PER SEC LETTER #030343/0144/11, DATED: 29/06/2011	DATE STARTED 20.03.11 DATE COMPLETED 20.03.11	RIYADH SAUDI ARABIA				INDEX		075	
01	03.04.11	REVISED AS PER SEC LETTER #030343/0037/11, DATED: 22-03-2011	CRG. DEPT. _____ ENG. DEPT. _____	1-1031018.01 P C257 CD-181242 03				PLANT NO.		REV. NO.	
REV. NO.	DATE	DESCRIPTION						DRAWING NUMBER			

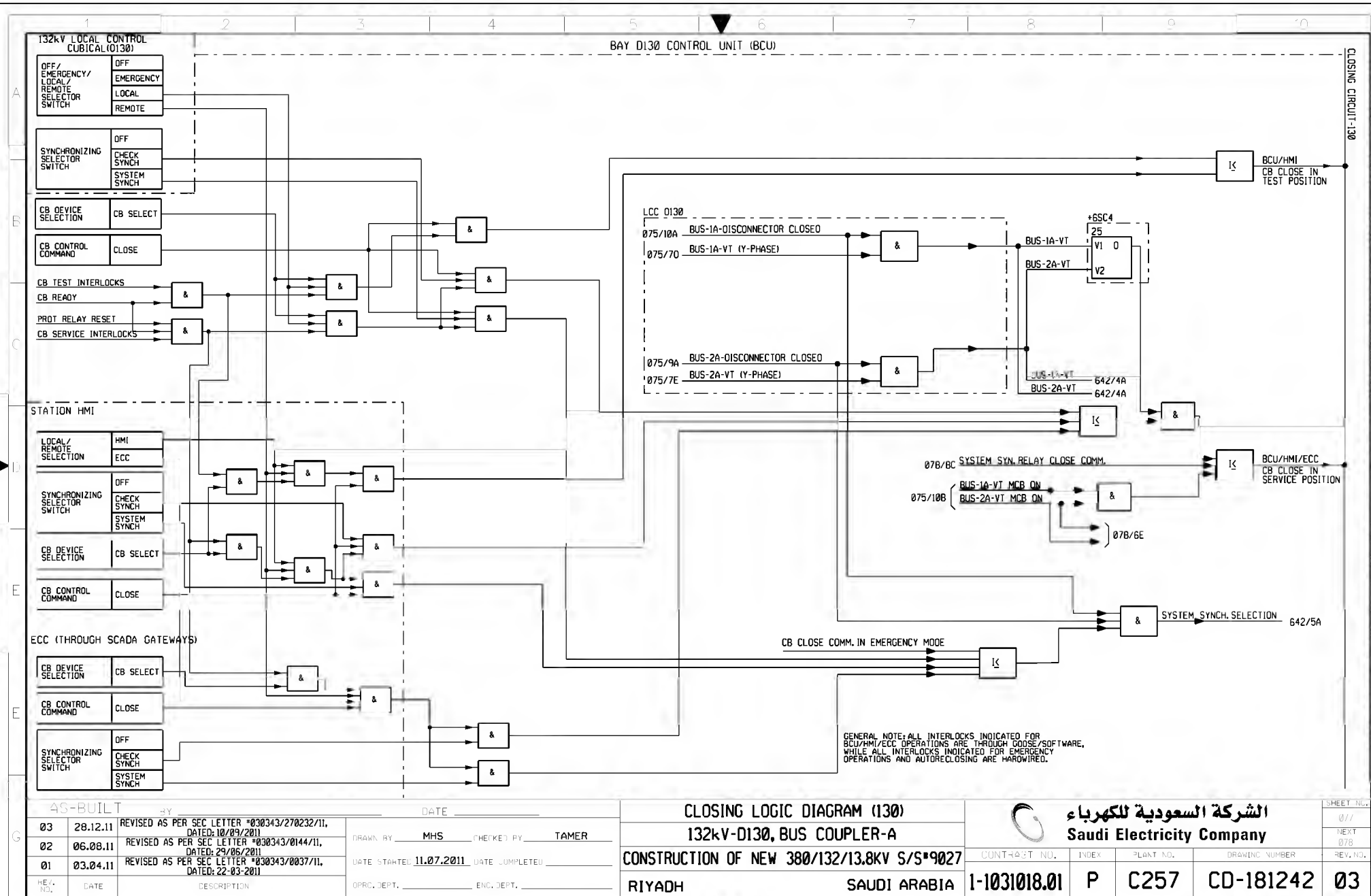


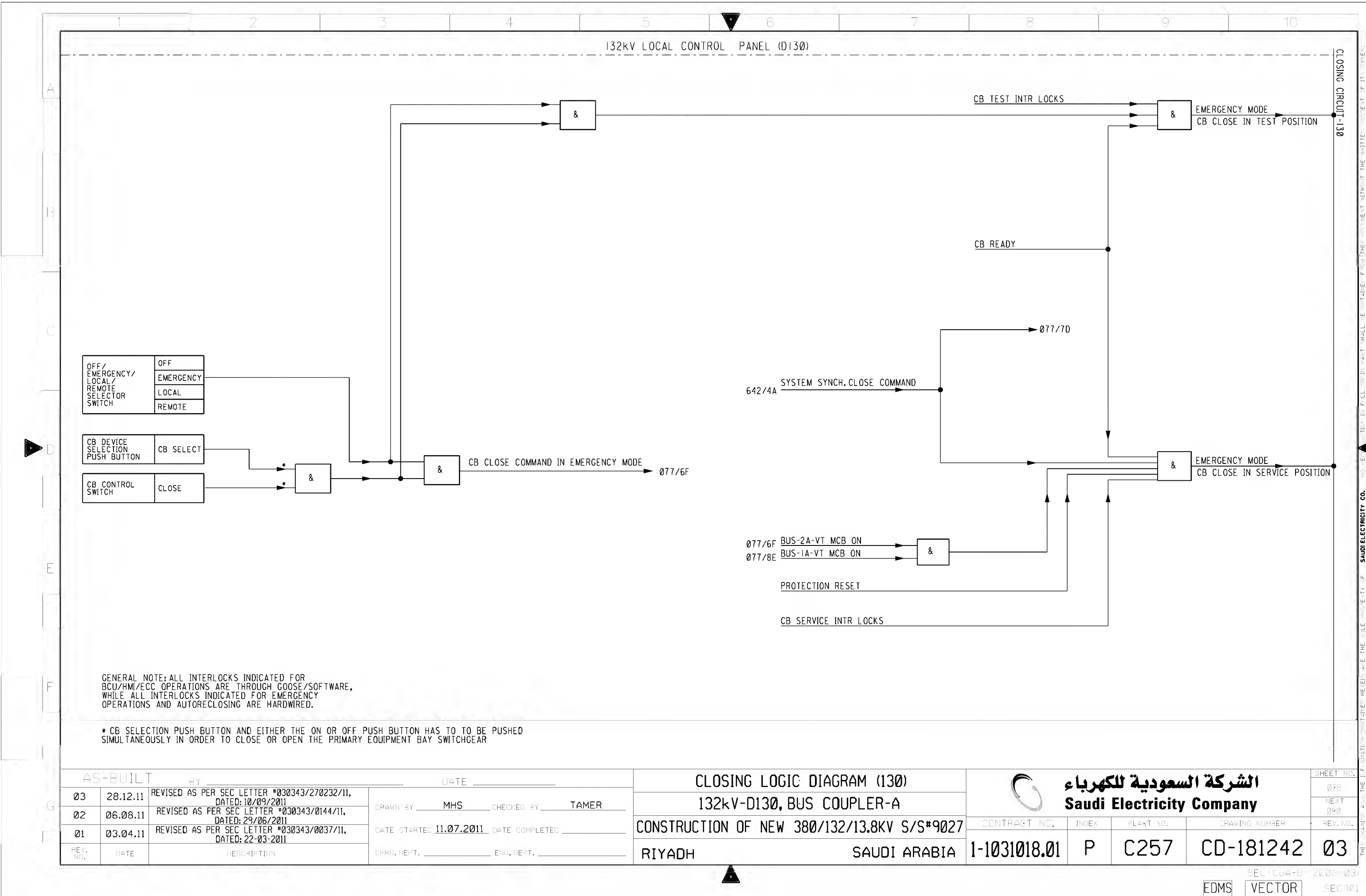
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01	03.04.11	REVISED AS PER SEC LETTER #030343/0037/11, DATED: 22-03-2011	DATE STARTED	09.02.2011
REV. NO.	DATE	DESCRIPTION	DATE COMPLETED	
			ENGR. DEPT.	

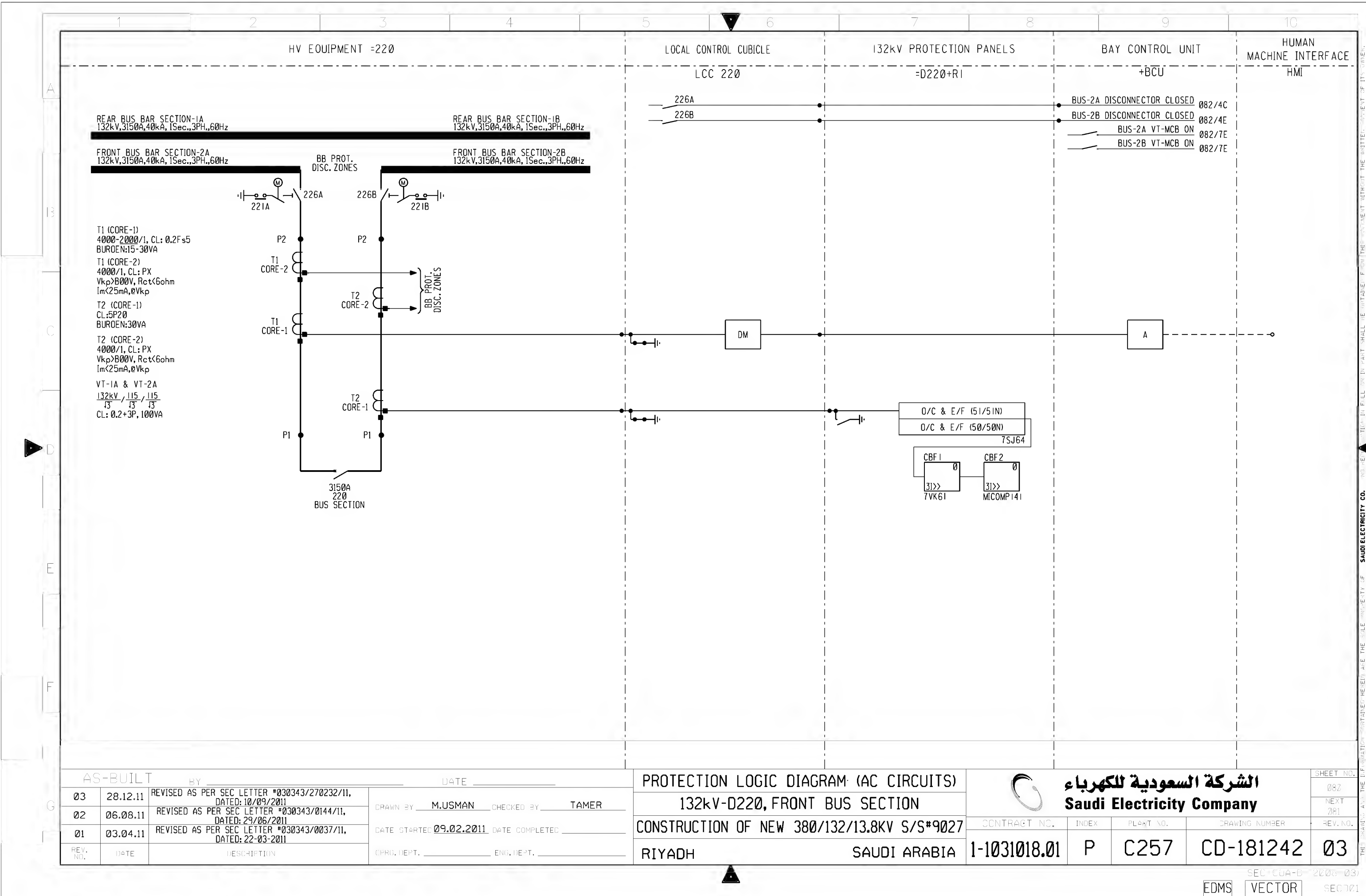
PROTECTION LOGIC DIAGRAM (AC CIRCUITS)
132kV-D130, BUS COUPLER-A
CONSTRUCTION OF NEW 380/132/13.8KV S/S#9027
RIYADH SAUDI ARABIA


الشركة السعودية للكهرباء Saudi Electricity Company					SHEET NO.
CONTRACT NO.	INDEX	PLANT NO.	DRAWING NUMBER	REV. NO.	076
1-1031018.01	P	C257	CD-181242	03	NEXT 076

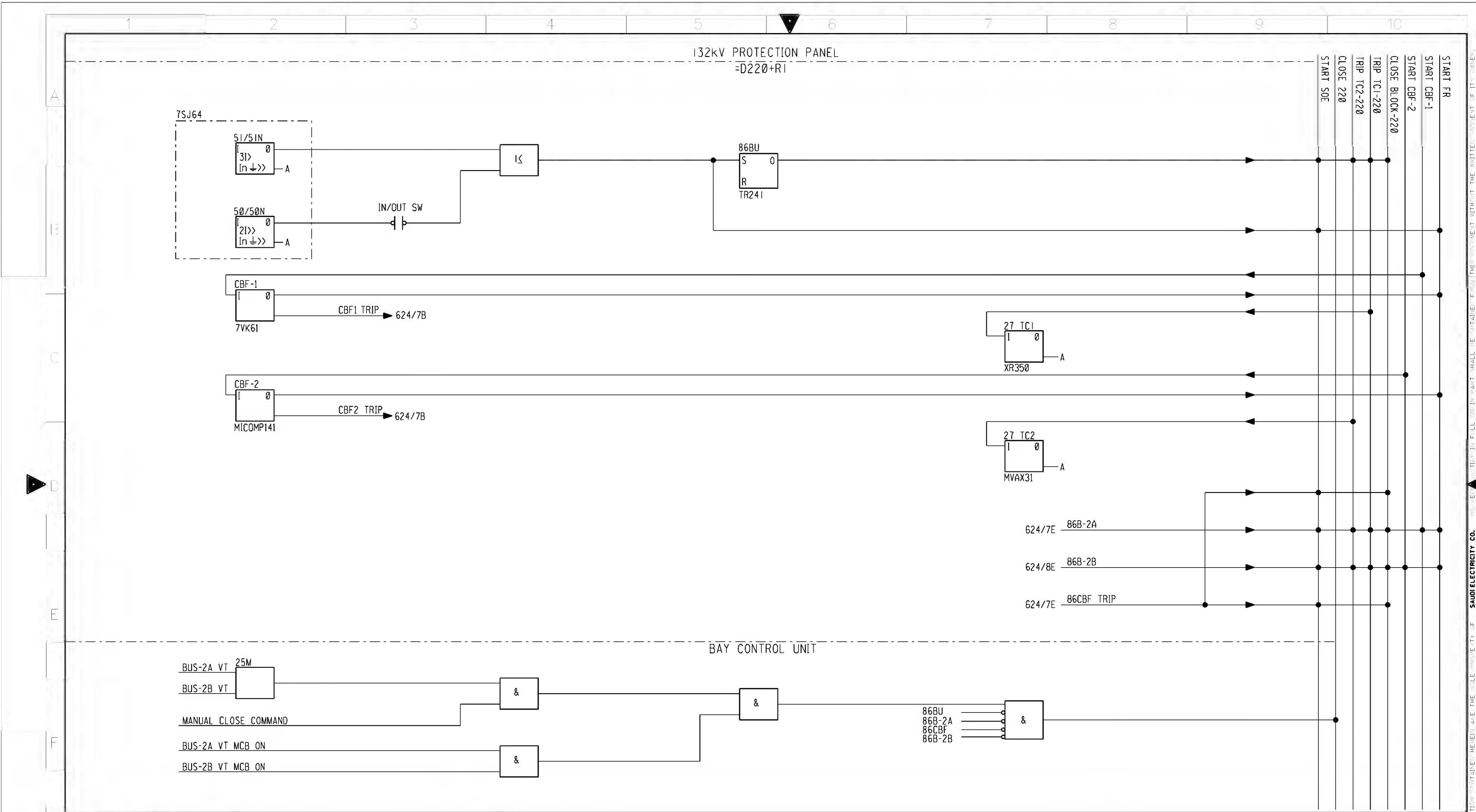








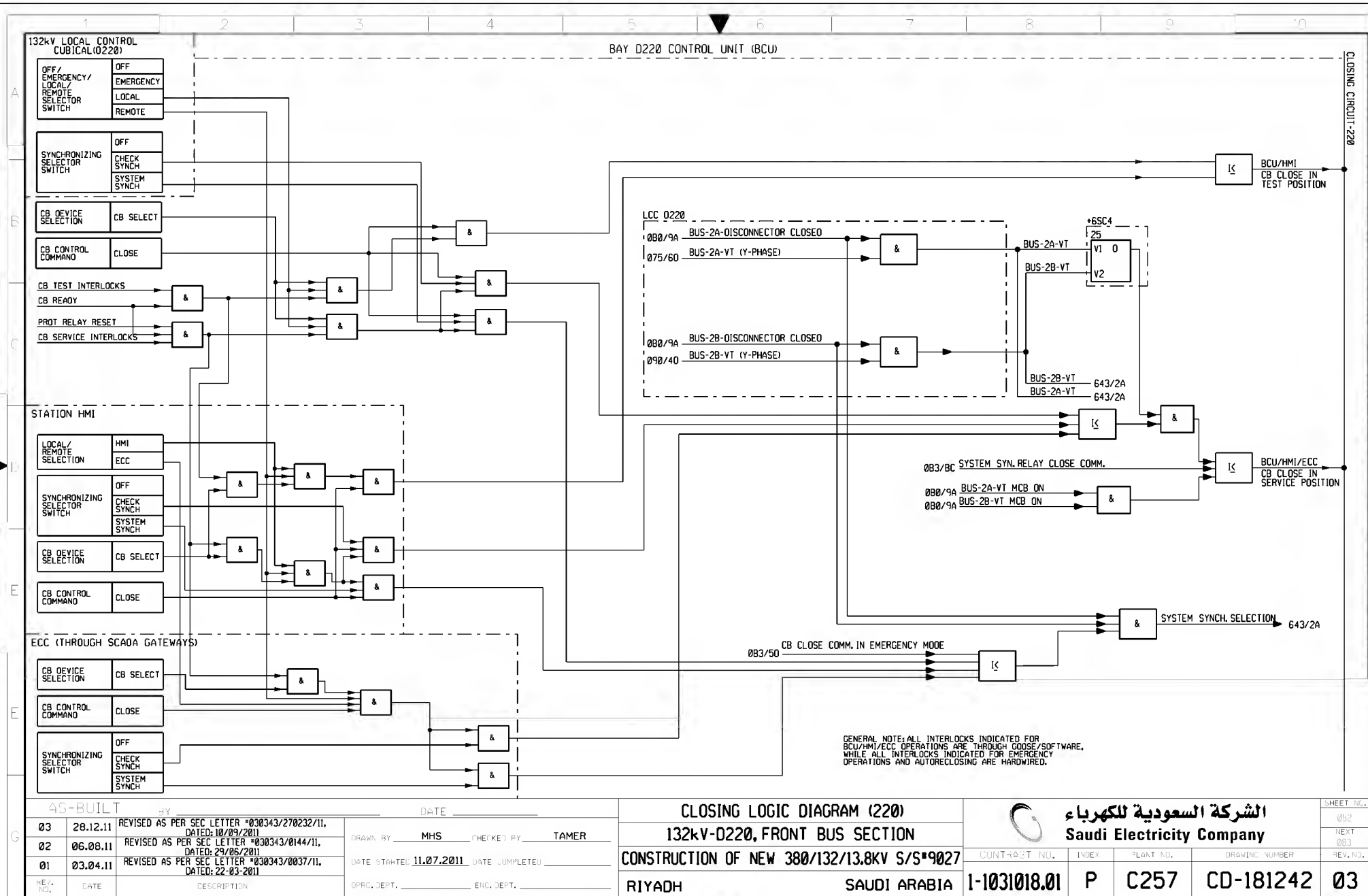
AS-BUILT			BY _____		DATE _____		PROTECTION LOGIC DIAGRAM (AC CIRCUITS)		<div><div>الشركة السعودية للكهرباء Saudi Electricity Company</div></div>		SHEET NO.		
REV. NO.	DATE	DESCRIPTION	DRWN BY	CHEK BY	132kV-D220, FRONT BUS SECTION		CONSTRUCTION OF NEW 380/132/13.8KV S/S#9027				CONTRACT NO.	INDEX	PLANT NO.
03	28.12.11	REVISED AS PER SEC LETTER #030343/270232/11, DATED: 10/09/2011	M.USMAN	TAMER	DATE STARTED 09.02.2011	DATE COMPLETED _____	SAUDI ARABIA	1-1031018.01	P	C257	CD-181242	03	082
02	06.08.11	REVISED AS PER SEC LETTER #030343/0144/11, DATED: 29/06/2011											081
01	03.04.11	REVISED AS PER SEC LETTER #030343/0037/11, DATED: 22-03-2011											080

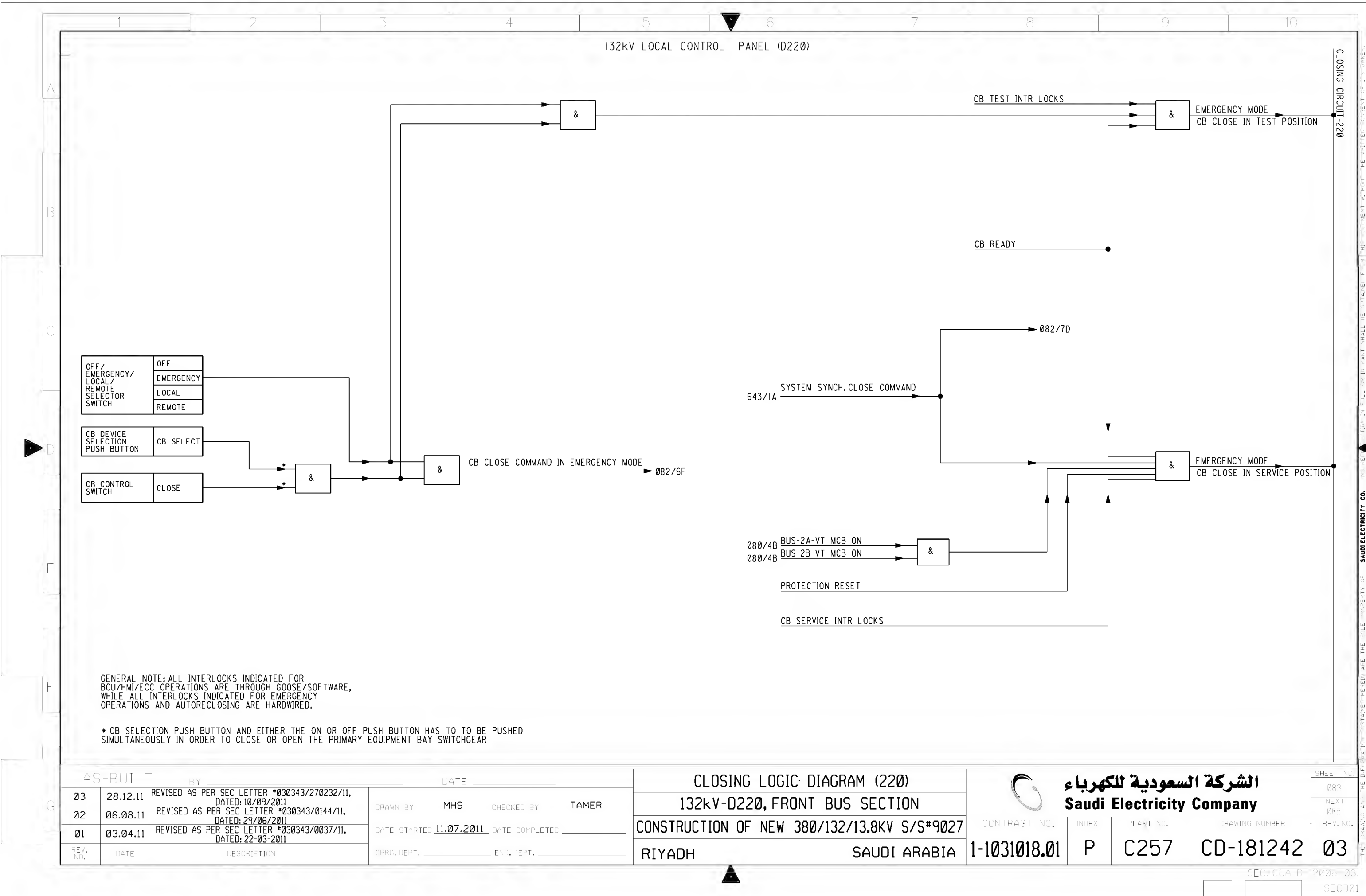


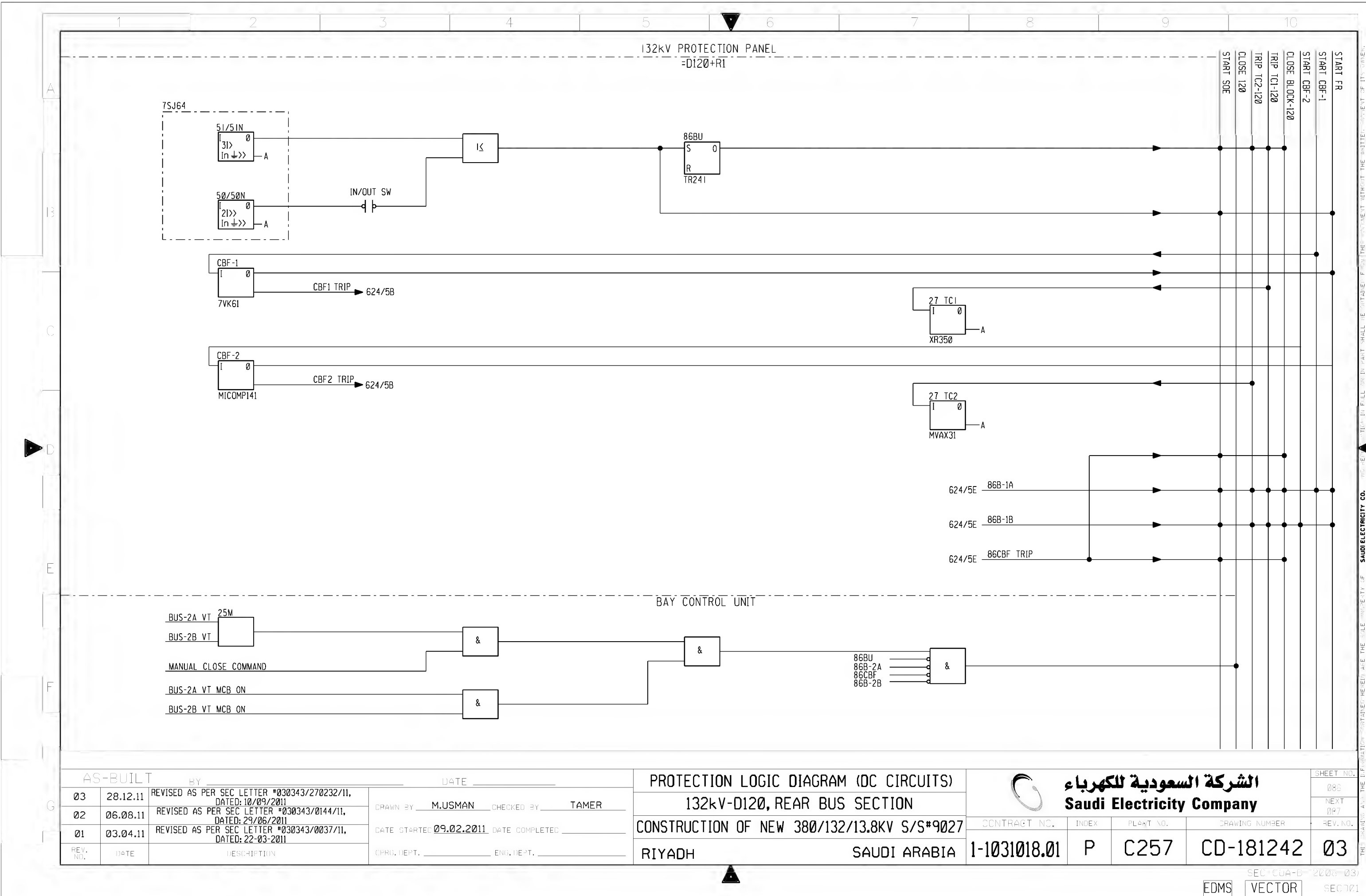
AS-BUILT			DATE	
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01	03.04.11	REVISED AS PER SEC LETTER #030343/0037/11, DATED: 22-03-2011	DATE STARTED	09.02.2011
REV. NO.	DATE	DESCRIPTION	DATE COMPLETED	ENG. DEPT.

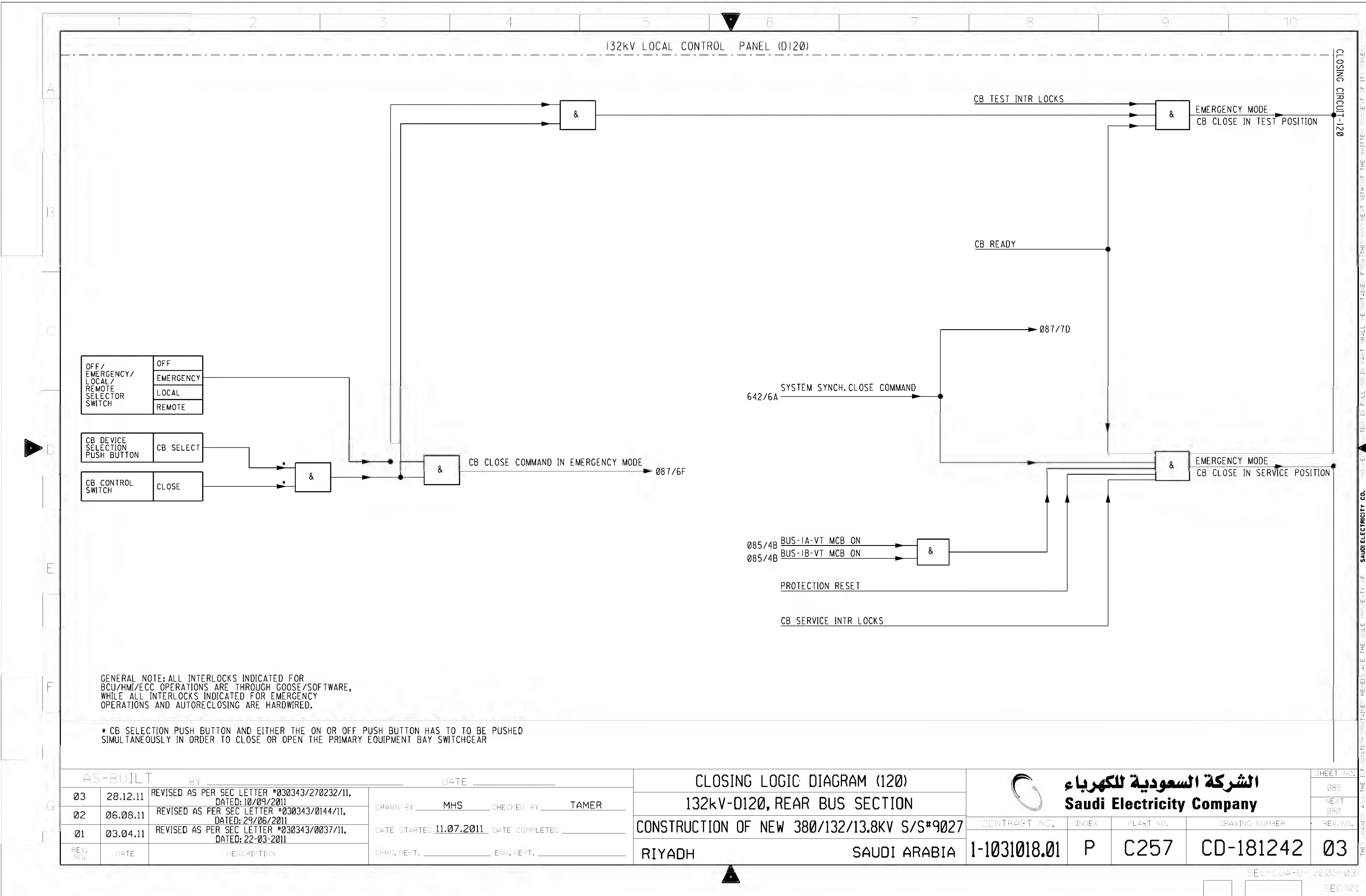
PROTECTION LOGIC DIAGRAM (DC CIRCUITS)	
132kV-D220, FRONT BUS SECTION	
CONSTRUCTION OF NEW 380/132/13.8KV S/S#9027	
RIYADH SAUDI ARABIA	

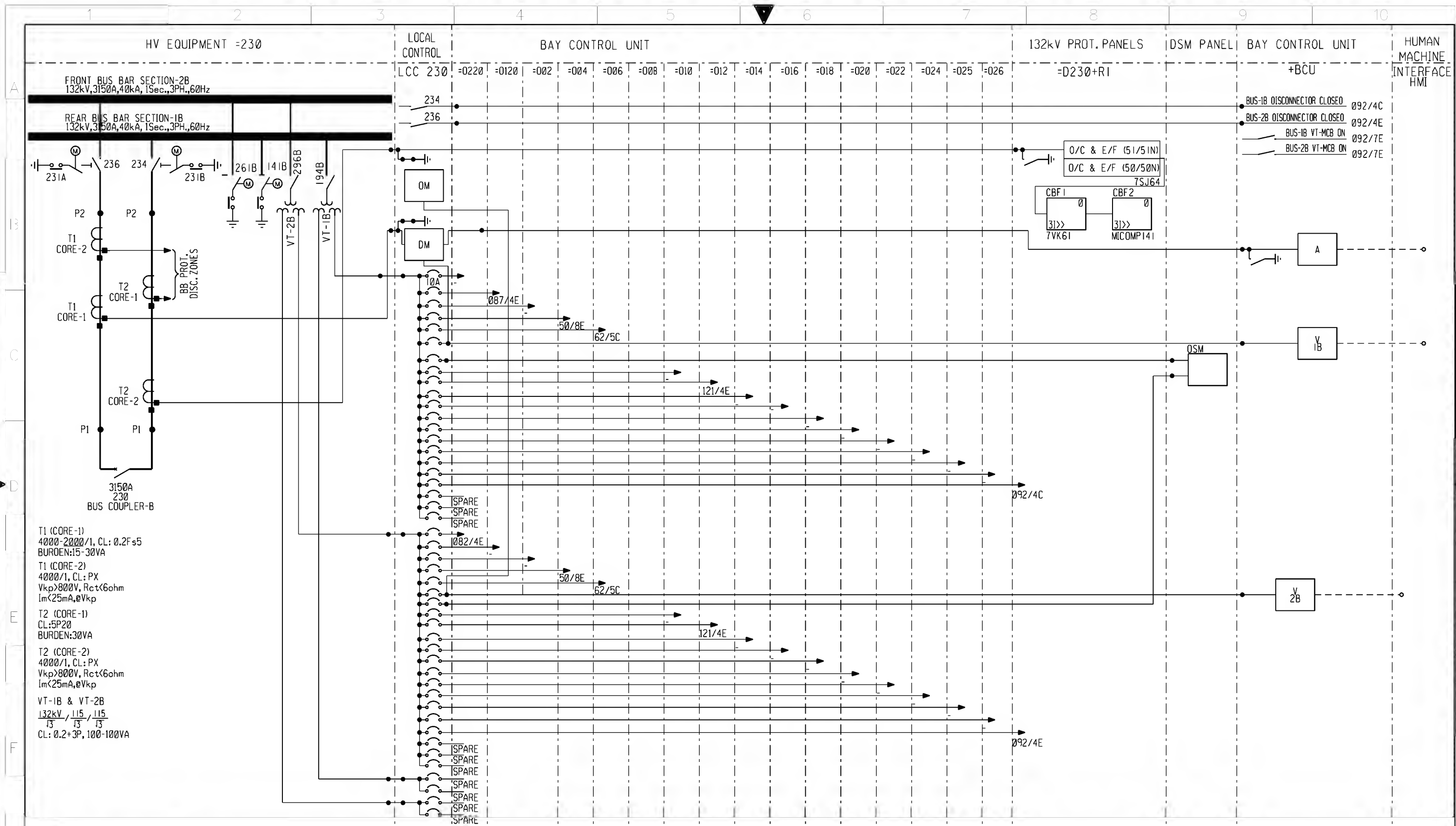
الشركة السعودية للكهرباء Saudi Electricity Company					SHEET NO.
CONTRACT NO.					081
INDEX					NEXT
PLANT NO.					082
DRAWING NUMBER					REV. NO.
1-1031018.01					03



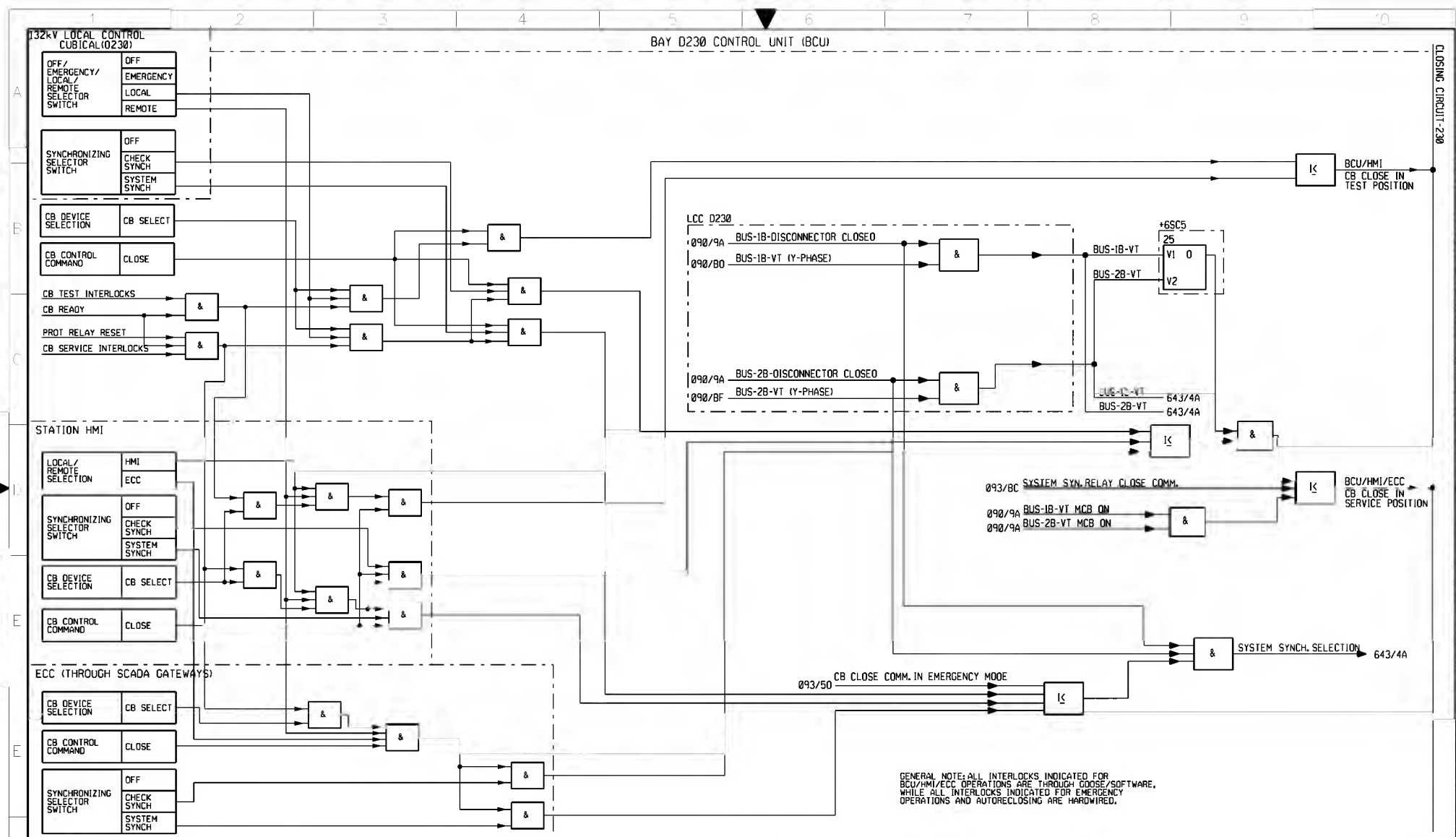








AS-BUILT			DATE		PROTECTION LOGIC DIAGRAM (AC CIRCUITS)		الشركة السعودية للكهرباء		SHEET NO.	
BY			DATE		132kV-D230, BUS COUPLER-B		Saudi Electricity Company		092	
03	28.12.11	REVISED AS PER SEC LETTER #030343/270232/11, DATED: 10/09/2011	DRAWN BY M.USMAN CHECKED BY TAMER		CONSTRUCTION OF NEW 380/132/13.8KV S/S#9027		CONTRACT NO. 1-1031018.01		NEXT 091	
02	06.08.11	REVISED AS PER SEC LETTER #030343/0144/11, DATED: 29/06/2011	DATE STARTED 09.02.2011 DATE COMPLETED		SAUDI ARABIA		INDEX P		REV. NO. 03	
01	03.04.11	REVISED AS PER SEC LETTER #030343/0037/11, DATED: 22-03-2011	CPRG. DEPT. ENG. DEPT.				PLANT NO. C257			
REV. NO.	DATE	DESCRIPTION					DRAWING NUMBER CD-181242			



AS-BUILT

REV.	DATE	DESCRIPTION	OPRC. DEPT.	END. DEPT.
03	28.12.11	REVISED AS PER SEC LETTER #030343/270232/11, DATED: 10/09/2011	MHS	TAMER
02	06.08.11	REVISED AS PER SEC LETTER #030343/0144/11, DATED: 29/05/2011		
01	03.04.11	REVISED AS PER SEC LETTER #030343/0037/11, DATED: 22-03-2011		

CLOSING LOGIC DIAGRAM (230)

132kV-0230, BUS COUPLER-B

CONSTRUCTION OF NEW 380/132/13.8KV S/S*9027

RIYADH

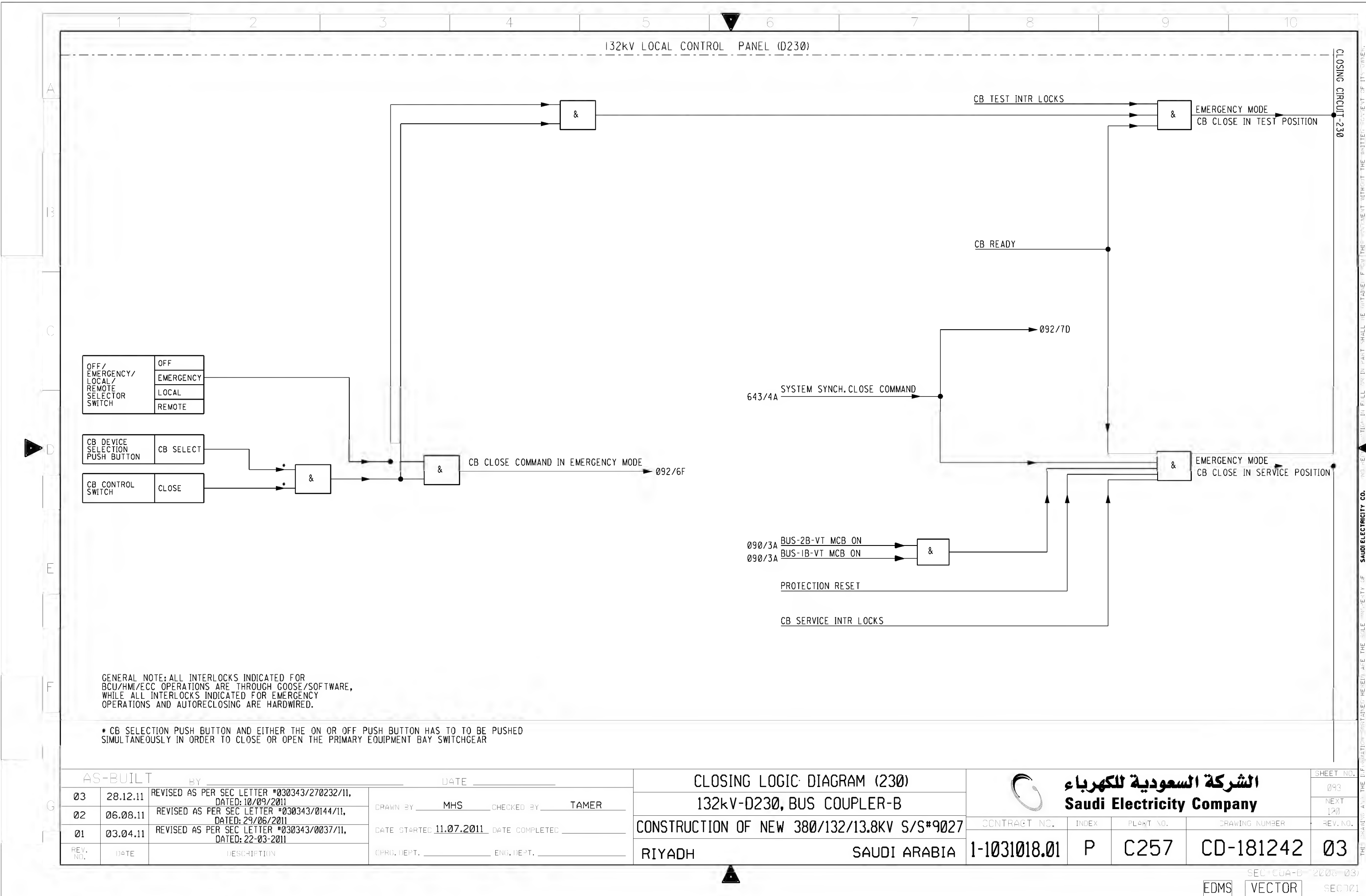
SAUDI ARABIA



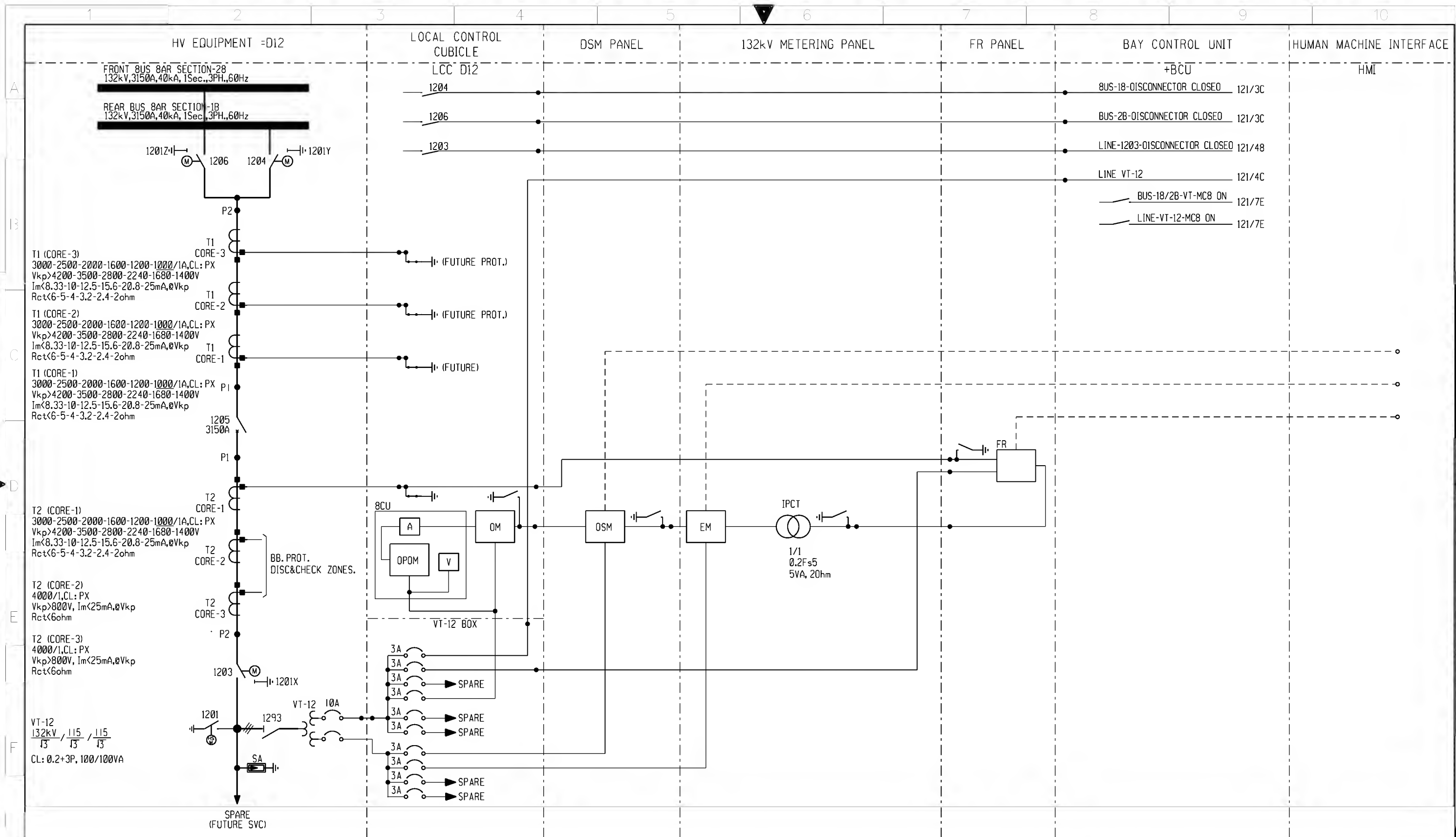
الشركة السعودية للكهرباء
Saudi Electricity Company

CONTRACT NO.	INDEX	PLANT NO.	DRAWING NUMBER	REV. NO.
1-1031018.01	P	C257	CD-181242	03

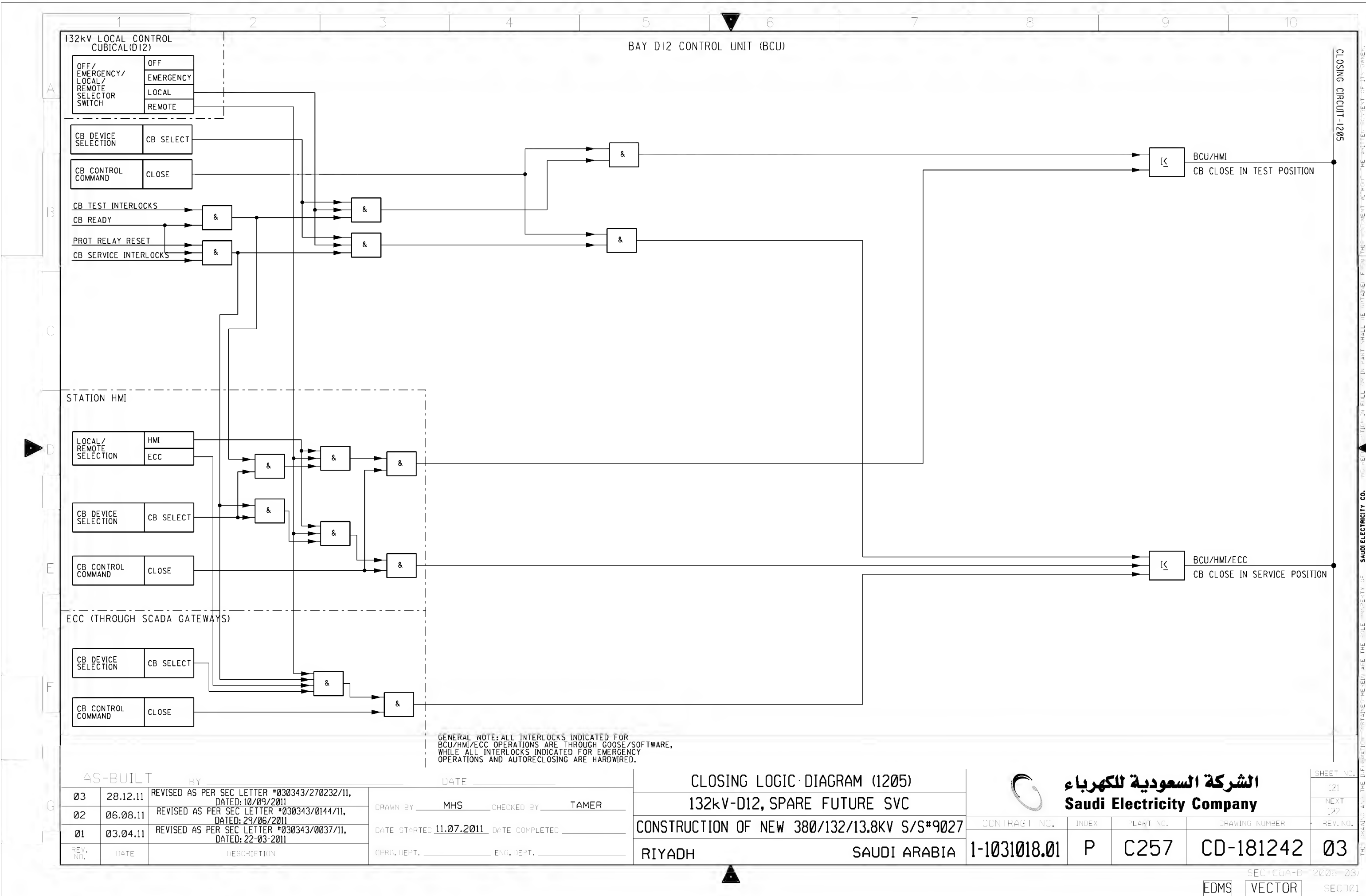
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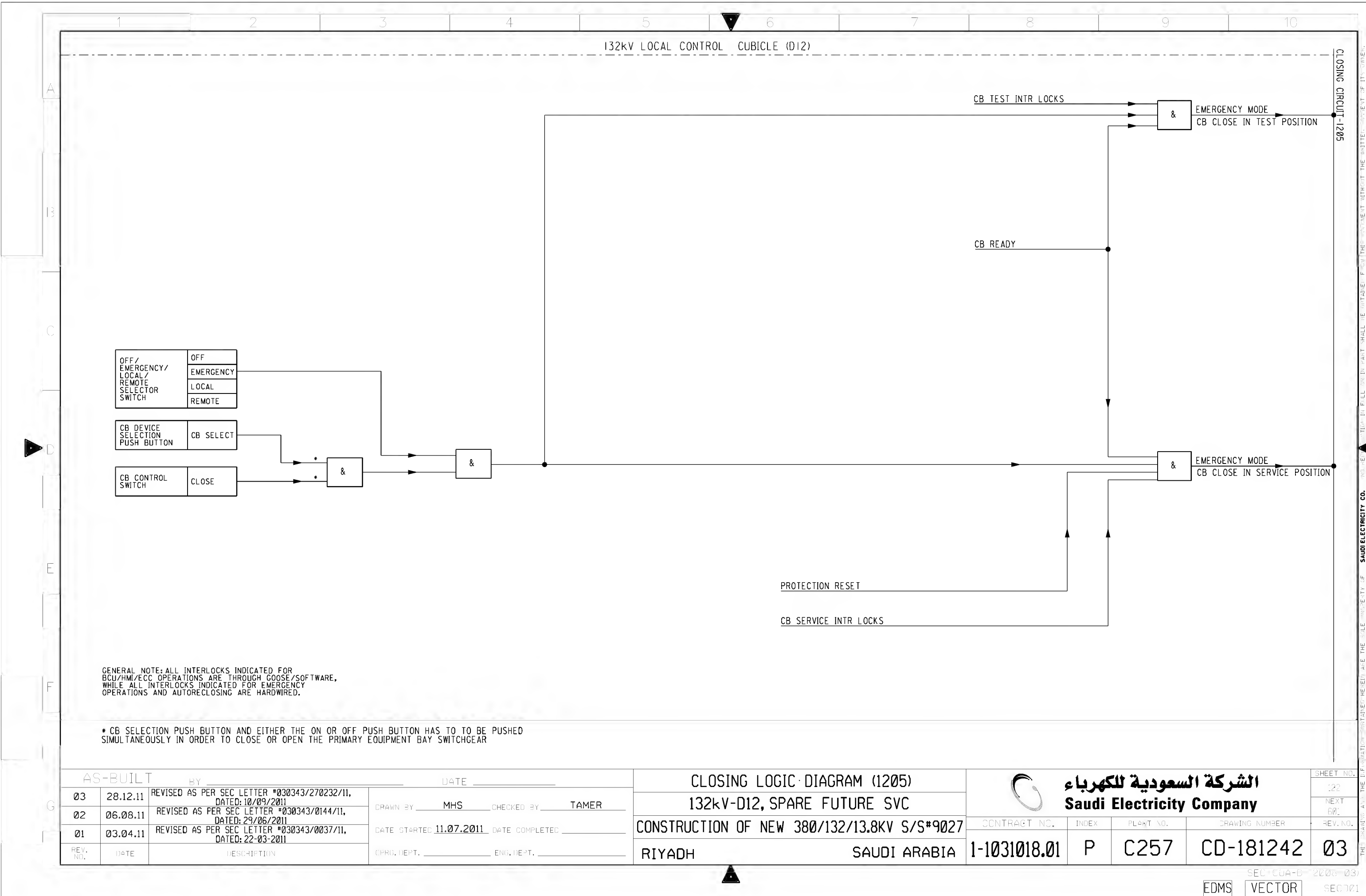


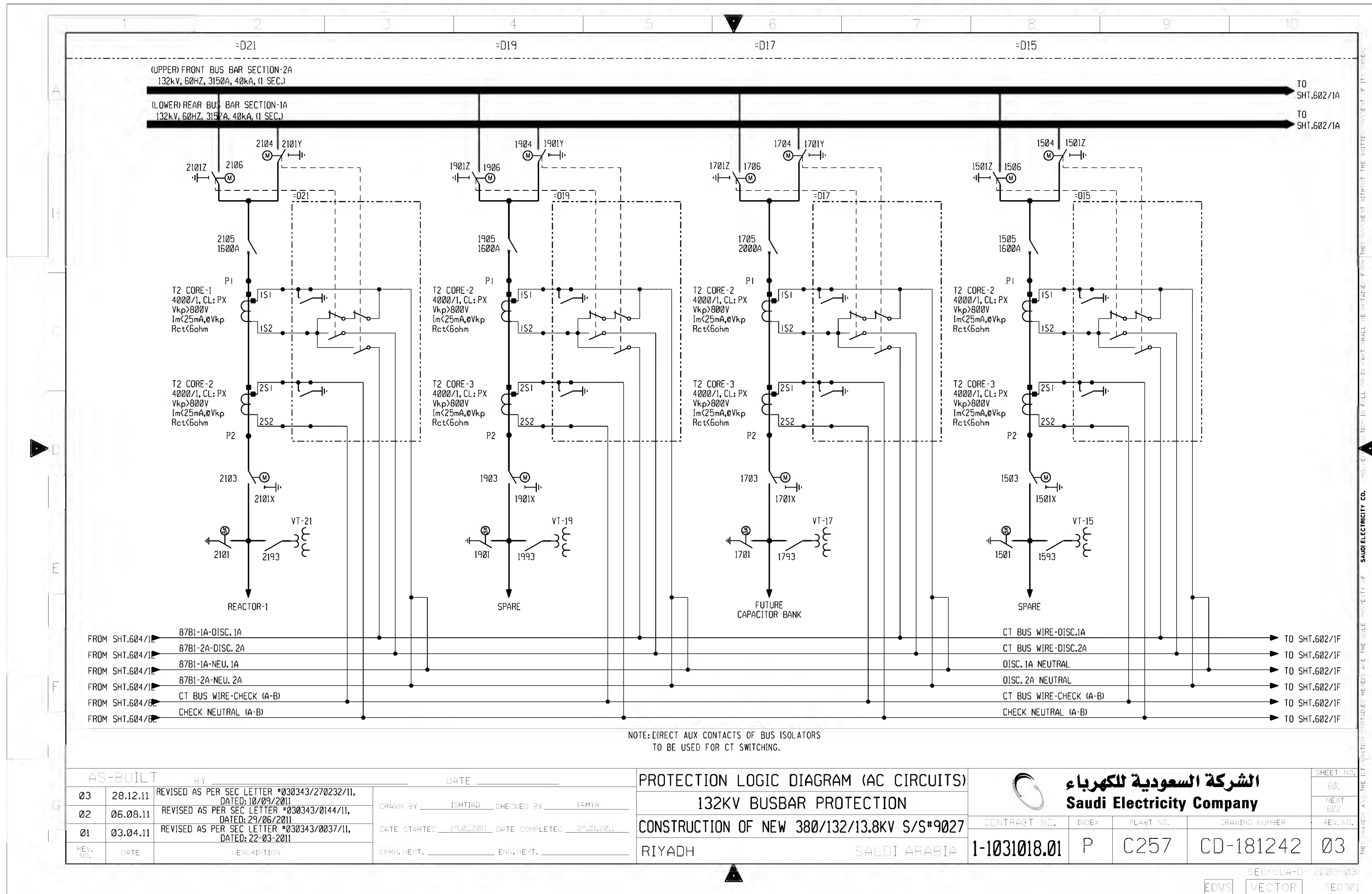
THIS DRAWING AND THE INFORMATION CONTAINED HEREIN ARE THE SOLE PROPERTY OF SAUDI ELECTRICITY CO. NO PART OF THIS DRAWING SHALL BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT THE WRITTEN PERMISSION OF SAUDI ELECTRICITY CO.

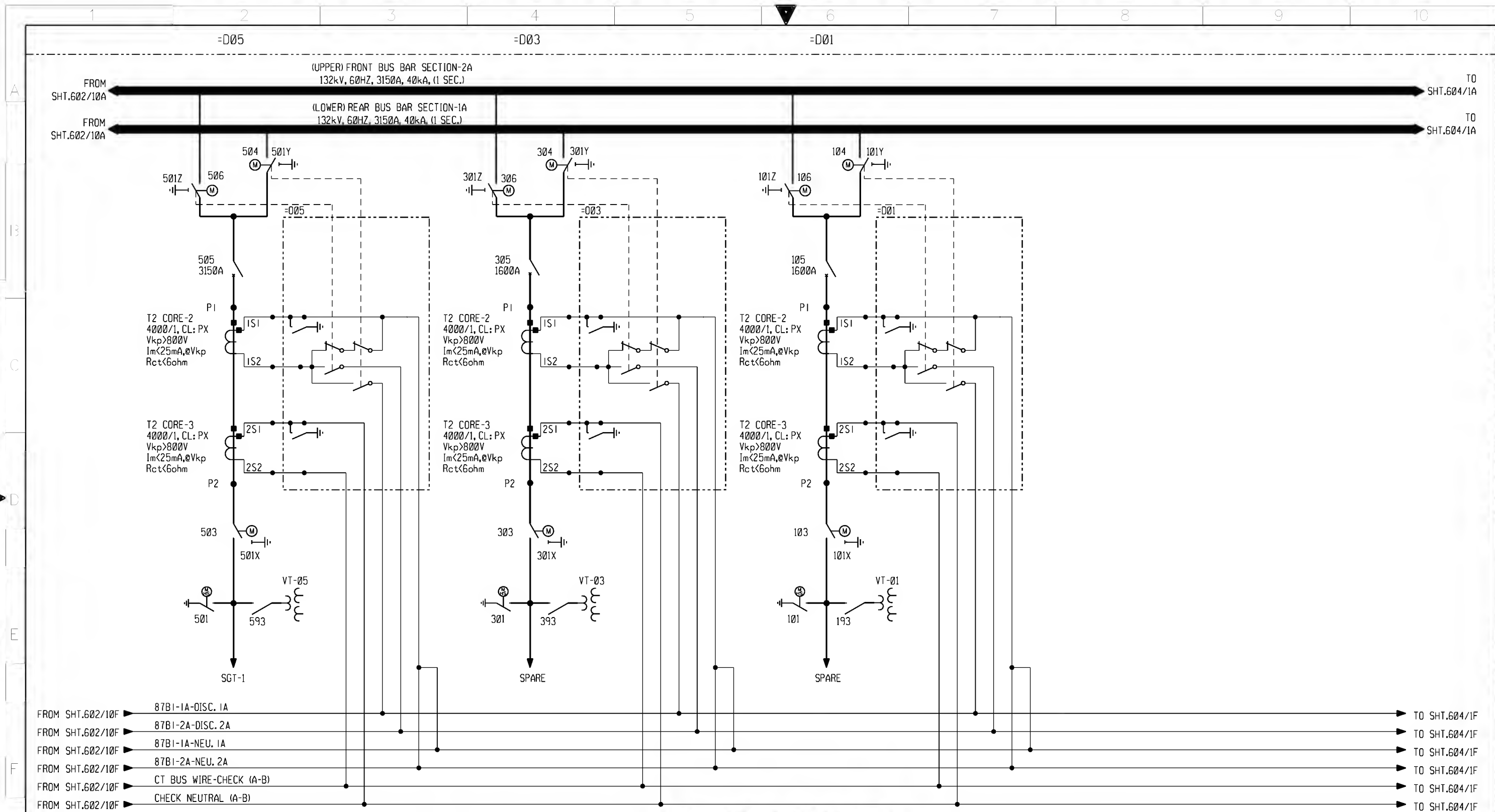


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02	06.08.11	REVISED AS PER SEC LETTER #030343/0144/11, DATED: 29/06/2011	DATE STARTED 09.02.2011		DATE COMPLETED		CONSTRUCTION OF NEW 380/132/13.8KV S/S#9027		NEXT	
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REV. NO.	DATE	DESCRIPTION	CONTRACT NO.		INDEX		PLANT NO.		DRAWING NUMBER	
			1-1031018.01		P		C257		CD-181242	
			RIYADH		SAUDI ARABIA		03		REV. NO.	



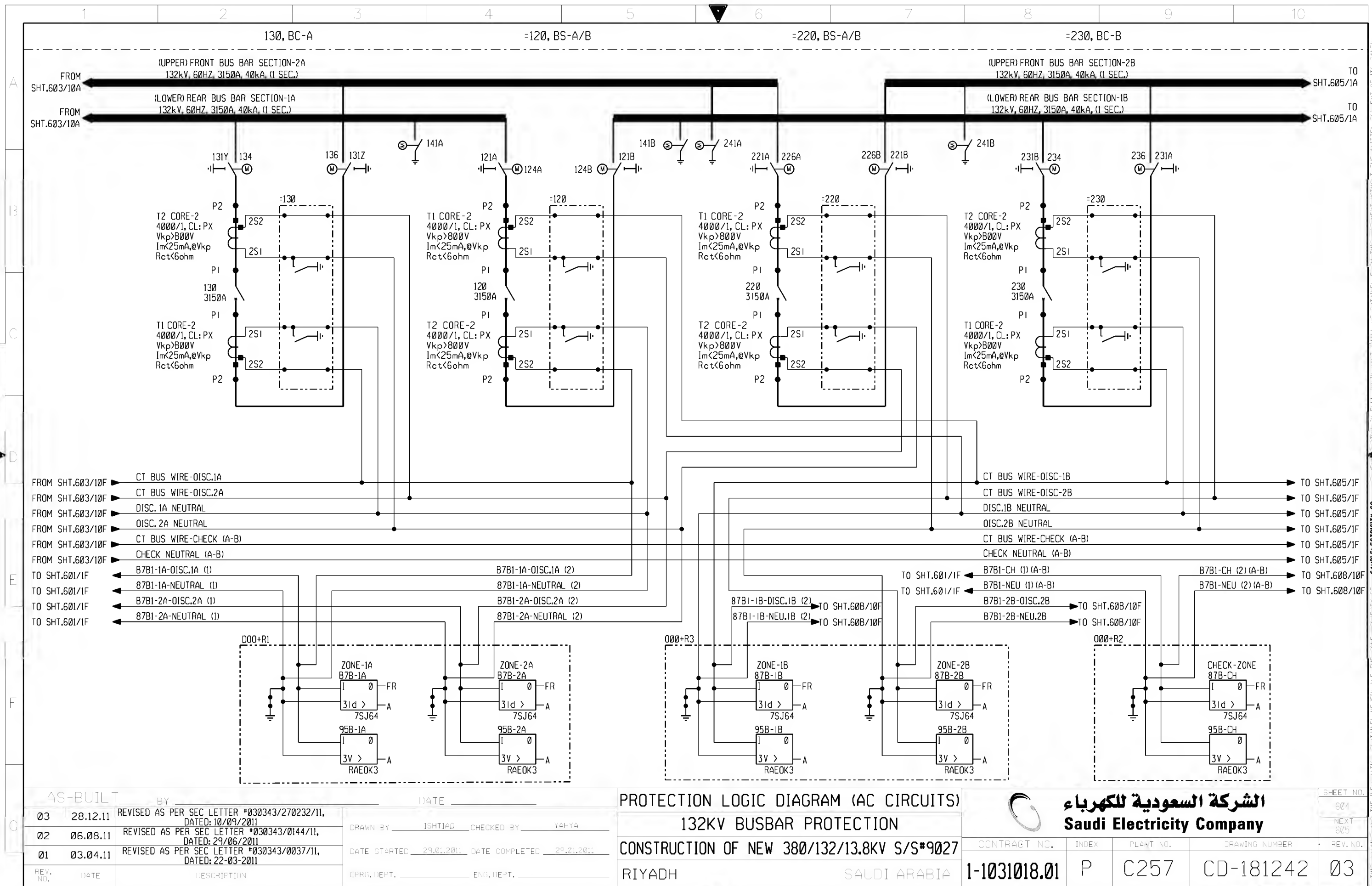


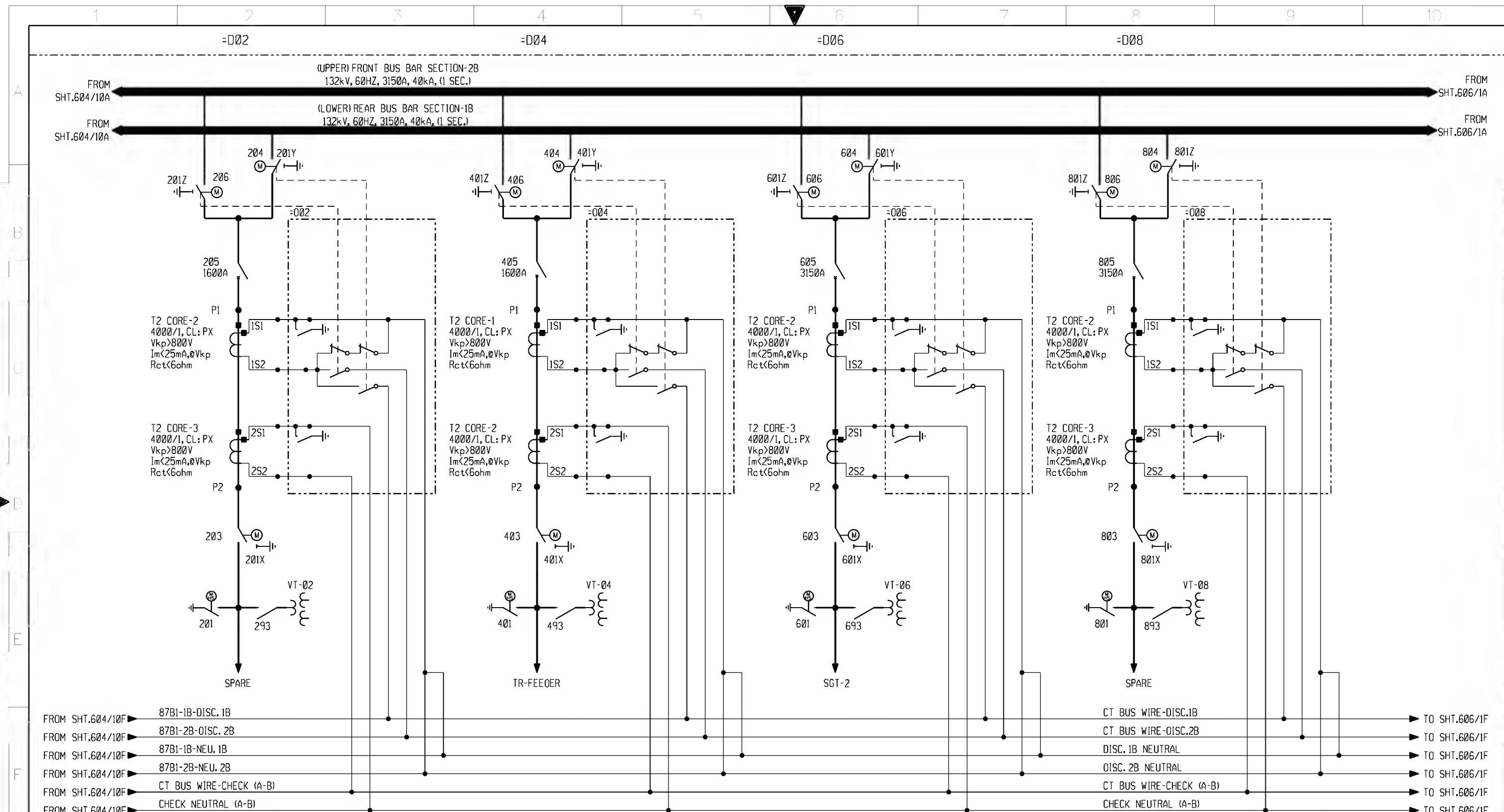





NOTE: DIRECT AUX CONTACTS OF BUS ISOLATORS
TO BE USED FOR CT SWITCHING.

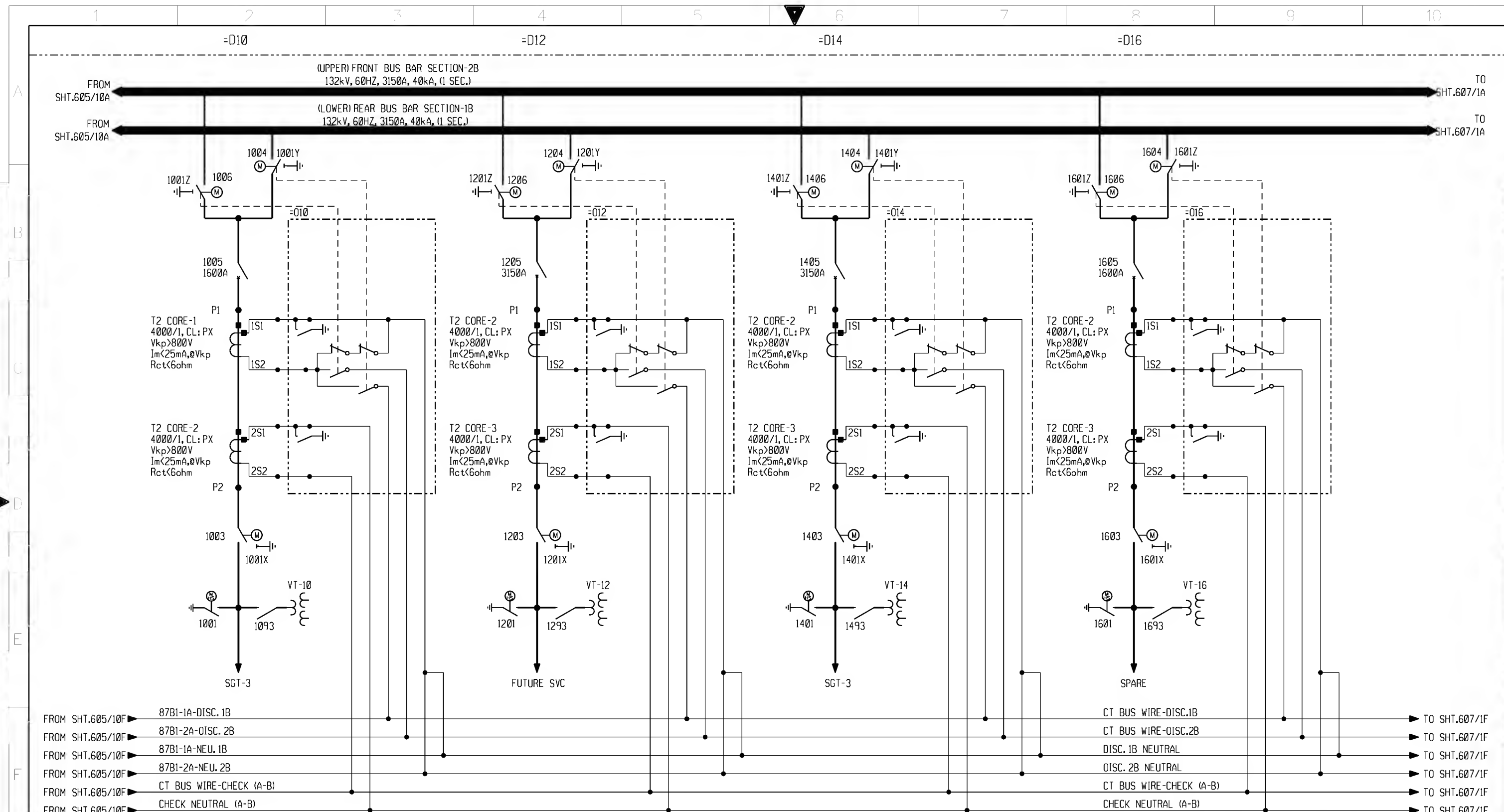
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BY					132KV BUSBAR PROTECTION		Saudi Electricity Company		603	
REV. NO.			DESCRIPTION		CONSTRUCTION OF NEW 380/132/13.8KV S/S#9027		CONTRACT NO.		NEXT	
DATE			DRAWN BY		RIYADH		INDEX		604	
			DATE STARTED		SAUDI ARABIA		DRAWING NUMBER		REV. NO.	
			ENG. DEPT.		1-1031018.01		C257		03	






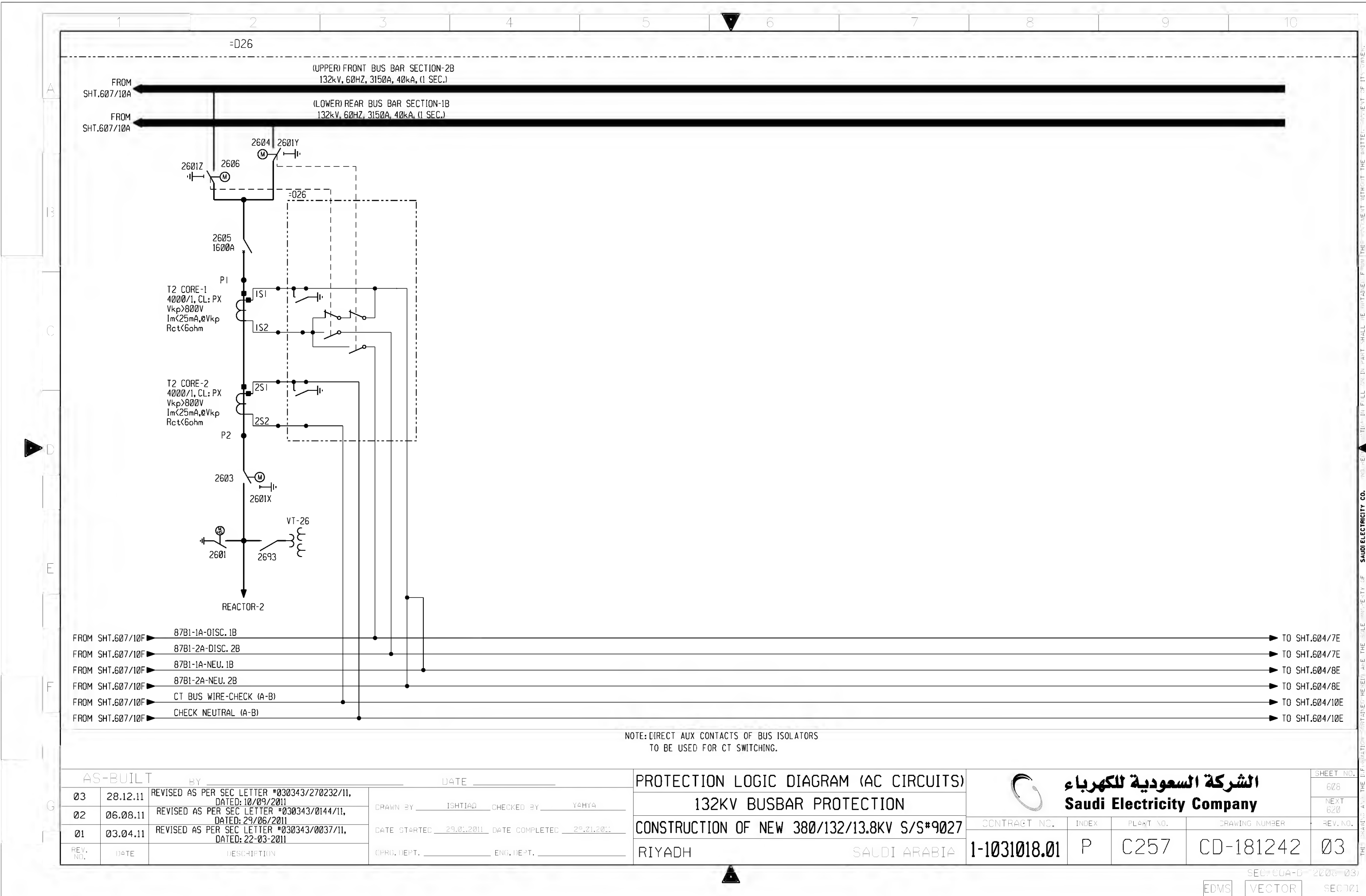
NOTE: DIRECT AUX CONTACTS OF BUS ISOLATORS
TO BE USED FOR CT SWITCHING.

AS-3JILT				BY		DATE		PROTECTION LOGIC DIAGRAM (AC CIRCUITS)				الشركة السعودية للكهرباء		SHEET NO.	
03		28.12.11		REVISED AS PER SEC LETTER #030343/270232/11, DATED: 10/09/2011		DRAWN BY ISHTIAQ		CHECKED BY YAHYA		132KV BUSBAR PROTECTION		Saudi Electricity Company		605	
02		06.08.11		REVISED AS PER SEC LETTER #030343/0144/11, DATED: 29/06/2011		DATE STARTED 29.01.2011		DATE COMPLETED 29.01.2011		CONSTRUCTION OF NEW 380/132/13.8KV S/S#9027		CONTRACT NO.		INDEX	
01		03.04.11		REVISED AS PER SEC LETTER #030343/0037/11, DATED: 22-03-2011		OPRG. DEPT.		ENG. DEPT.		RIYADH		20931021/00		P	
REV. NO.		DATE		DESCRIPTION						SAUDI ARABIA		C257		CD-181242	
												DRAWING NUMBER		REV. NO.	
												03			



NOTE: DIRECT AUX CONTACTS OF BUS ISOLATORS
TO BE USED FOR CT SWITCHING.


AS-3JILT				BY _____		DATE _____		PROTECTION LOGIC DIAGRAM (AC CIRCUITS)		 <div>الشركة السعودية للكهرباء Saudi Electricity Company</div>		SHEET NO.							
03		28.12.11		REVISED AS PER SEC LETTER #030343/270232/11, DATED: 10/09/2011		DRAWN BY _____ ISHTIAQ _____ CHECKED BY _____ YAHYA _____		132KV BUSBAR PROTECTION				606							
02		06.08.11		REVISED AS PER SEC LETTER #030343/0144/11, DATED: 29/06/2011		DATE STARTED _____ 29.01.2011 _____ DATE COMPLETED _____ 29.01.2011 _____		CONSTRUCTION OF NEW 380/132/13.8KV S/S#9027		CONTRACT NO.		INDEX		PLANT NO.		DRAWING NUMBER		REV. NO.	
01		03.04.11		REVISED AS PER SEC LETTER #030343/0037/11, DATED: 22-03-2011		OPRG. DEPT. _____ ENG. DEPT. _____		RIYADH SAUDI ARABIA		20931021/00		P		C257		CD-181242		03	
REV. NO.		DATE		DESCRIPTION															



PHILOSOPHY OF 132kV DOUBLE BUS-BAR PROTECTION
UNDER DIFFERENT OPERATING CONDITION VIS-A-VIS
TRIPPING INITIATION OF BUS-BAR PROTECTION

DISCRIMINATION ZONE			CHECK ZONE			TRIP INITIATE
IN/OUT POSITION	CT SUP. STATUS	BUSBAR PROTECTION RELAY	IN/OUT POSITION	CT SUP. STATUS	BUSBAR PROTECTION RELAY	
IN	HEALTHY	OPERATED	IN	HEALTHY	OPERATED	YES
IN	HEALTHY	OPERATED	OUT	HEALTHY	-	YES
IN	HEALTHY	OPERATED	IN	UNHEALTHY	NOT OPERATED	YES
OUT	HEALTHY	-	IN	HEALTHY	OPERATED	YES
OUT	HEALTHY	-	OUT	HEALTHY	-	NO
OUT	HEALTHY	-	IN	UNHEALTHY	NOT OPERATED	NO
IN	UNHEALTHY	NOT OPERATED	IN	HEALTHY	OPERATED	YES
IN	UNHEALTHY	NOT OPERATED	OUT	HEALTHY	-	NO
IN	UNHEALTHY	NOT OPERATED	IN	UNHEALTHY	NOT OPERATED	NO

NOTES:
1) UNHEALTHY CONDITION OF CT SUPERVISION ALSO INCLUDES POSSIBILITY OF MANUAL BLOCKING.
2) DISCRIMINATION ZONE INCLUDES ANY / ALL ZONE 1A, 2A, 1B, 2B, 1C, 2C, 1D, & 2D.

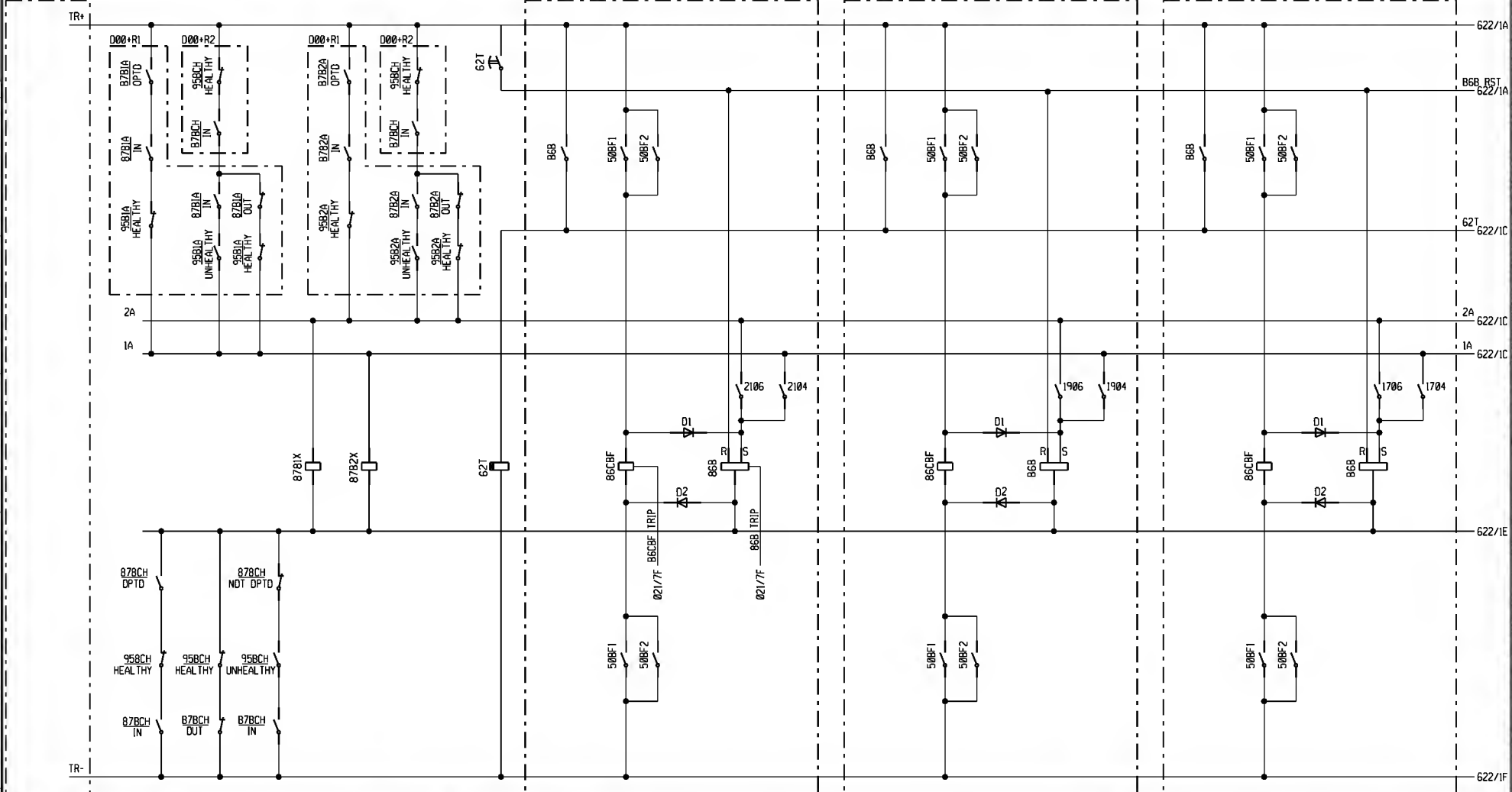
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03	28.12.11	REVISED AS PER SEC LETTER #030343/270232/11, DATED: 10/09/2011				132kV BUSBAR PROTECTION PANEL						620
02	06.08.11	REVISED AS PER SEC LETTER #030343/0144/11, DATED: 29/06/2011	DRAWN BY _____ ISHTIAD	CHECKED BY _____ YAHYA								NEXT 621
01	03.04.11	REVISED AS PER SEC LETTER #030343/0037/11, DATED: 22-03-2011	DATE STARTED _____ 29.01.11	DATE COMPLETED _____ 20.21.11		CONSTRUCTION OF NEW 380/132/13.8KV S/S#9027		CONTRACT NO.	INDEX	PLANT NO.	DRAWING NUMBER	REV. NO.
REV. NO.	DATE	DESCRIPTION	CPRG. DEPT. _____	ENG. DEPT. _____		RIYADH SAUDI ARABIA		1-1031018.01	P	C257	CD-181242	03

D00+R2 (CHECK_ZONE)

REACTOR-1 (-D21)

CABLE-1 (-D19)

CABLE-2 (-D17)



AS-BUILT

REVISED AS PER SEC LETTER #030343/270232/11,
DATED: 10/09/2011

REVISED AS PER SEC LETTER #030343/0144/11,
DATED: 29/05/2011

REVISED AS PER SEC LETTER #030343/0037/11,
DATED: 22-03-2011

DATE

DRAWN BY: MHE (CHECKED BY: YAHYA)

DATE STARTED: 30/01/11 DATE COMPLETED: 30/01/11

OPRC. DEPT. _____ ENG. DEPT. _____

PROTECTION LOGIC DIAGRAM (DC CIRCUITS)

132kV BUSBAR PROTECTION

CONSTRUCTION OF NEW 380/132/13.8KV S/S*9027

RIYADH

SAUDI ARABIA



الشركة السعودية للكهرباء
Saudi Electricity Company

CONTRACT NO. 1-1031018.01

INDEX P

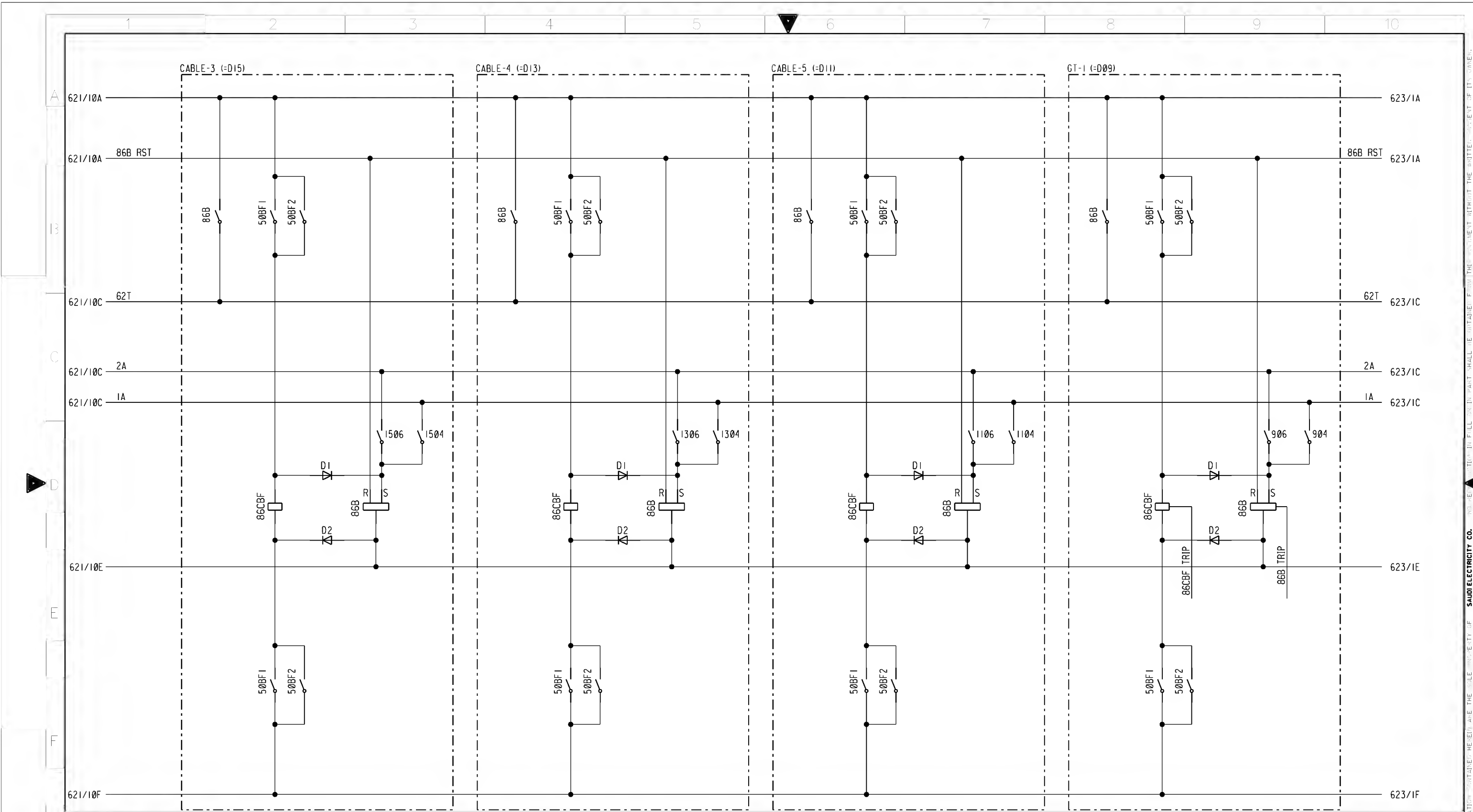
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DRAWING NUMBER CD-181242

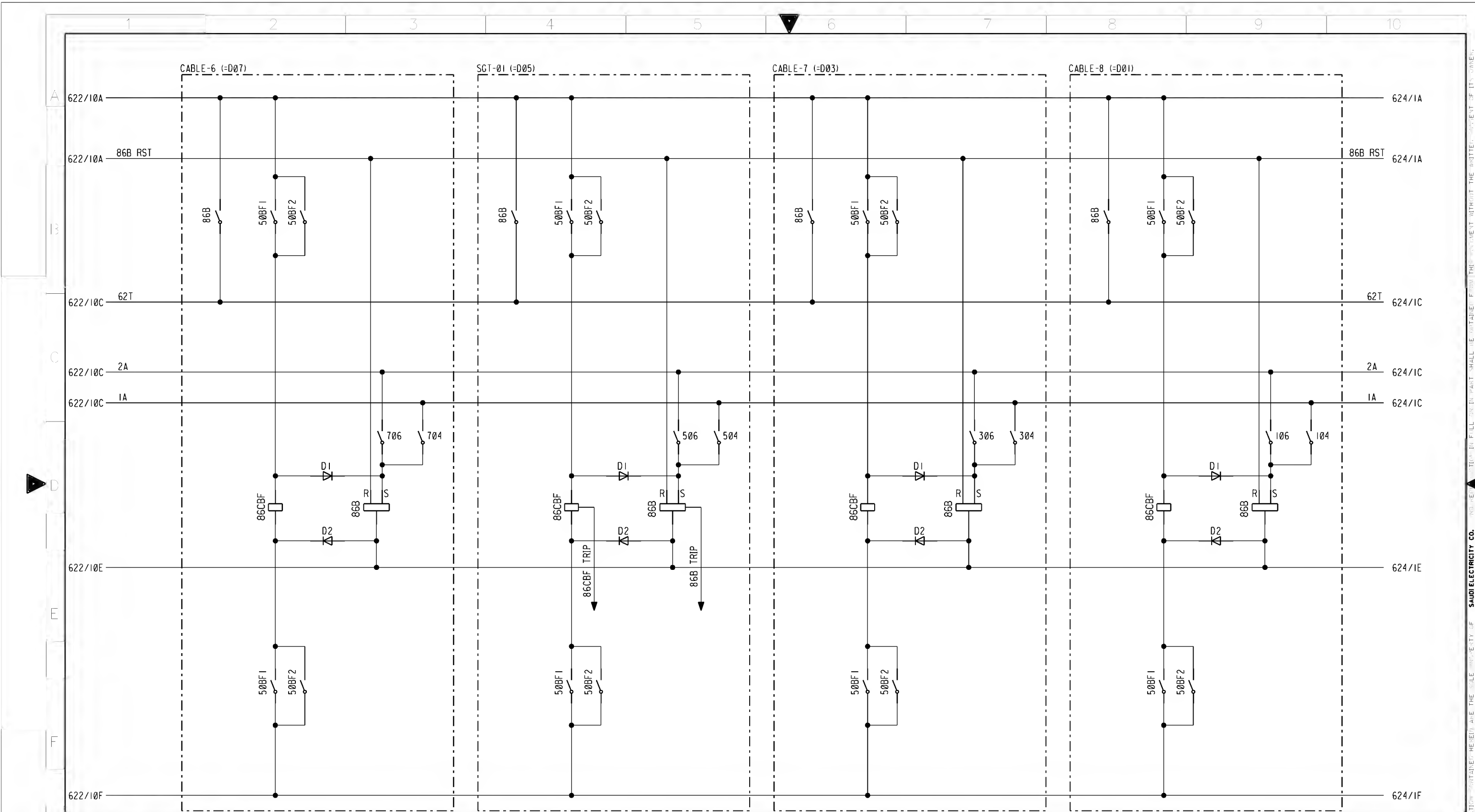
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NEXT 622
REV. NO. 03

SFI / (0A-1) / 22/2/23

SEC001



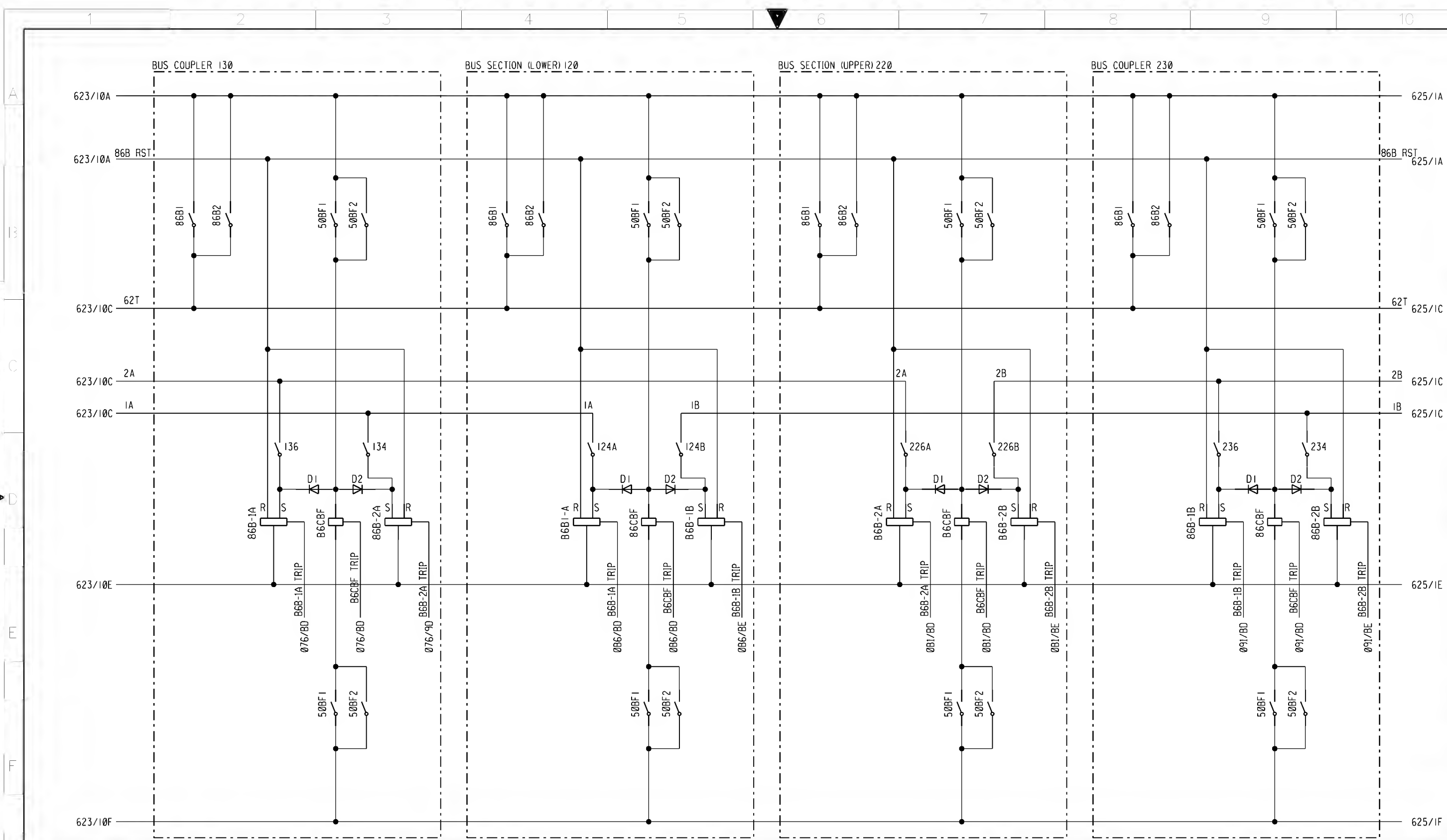
AS-BUILT			BY		DATE		PROTECTION LOGIC DIAGRAM (DC CIRCUITS)		 الشركة السعودية للكهرباء Saudi Electricity Company				SHEET NO.		
03	28.12.11	REVISED AS PER SEC LETTER #030343/270232/11, DATED: 10/09/2011					132kV BUSBAR PROTECTION						622		
02	06.08.11	REVISED AS PER SEC LETTER #030343/0144/11, DATED: 29/06/2011	DRAWN BY		YHS	CHECKED BY	YAHYA							NEXT 623	
01	03.04.11	REVISED AS PER SEC LETTER #030343/0037/11, DATED: 22-03-2011	DATE STARTED		30.01.11	DATE COMPLETED	30.01.11	CONSTRUCTION OF NEW 380/132/13.8KV S/S#9027		CONTRACT NO.		INDEX	PLANT NO.	DRAWING NUMBER	REV. NO.
REV. NO.	DATE	DESCRIPTION	CPRG. DEPT.		ENG. DEPT.		RIYADH SAUDI ARABIA		1-1031018.01		P	C257	CD-181242	03	



AS-BUILT			DATE	
03	28.12.11	REVISED AS PER SEC LETTER #030343/270232/11, DATED: 10/09/2011	DRAWN BY	YHS
02	06.08.11	REVISED AS PER SEC LETTER #030343/0144/11, DATED: 29/06/2011	CHECKED BY	YAHYA
01	03.04.11	REVISED AS PER SEC LETTER #030343/0037/11, DATED: 22-03-2011	DATE STARTED	30.01.11
REV. NO.	DATE	DESCRIPTION	DATE COMPLETED	30.01.11
			CRG. DEPT.	ENG. DEPT.

PROTECTION LOGIC DIAGRAM (DC CIRCUITS)	
132kV BUSBAR PROTECTION	
CONSTRUCTION OF NEW 380/132/13.8KV S/S#9027	
RIYADH	SAUDI ARABIA

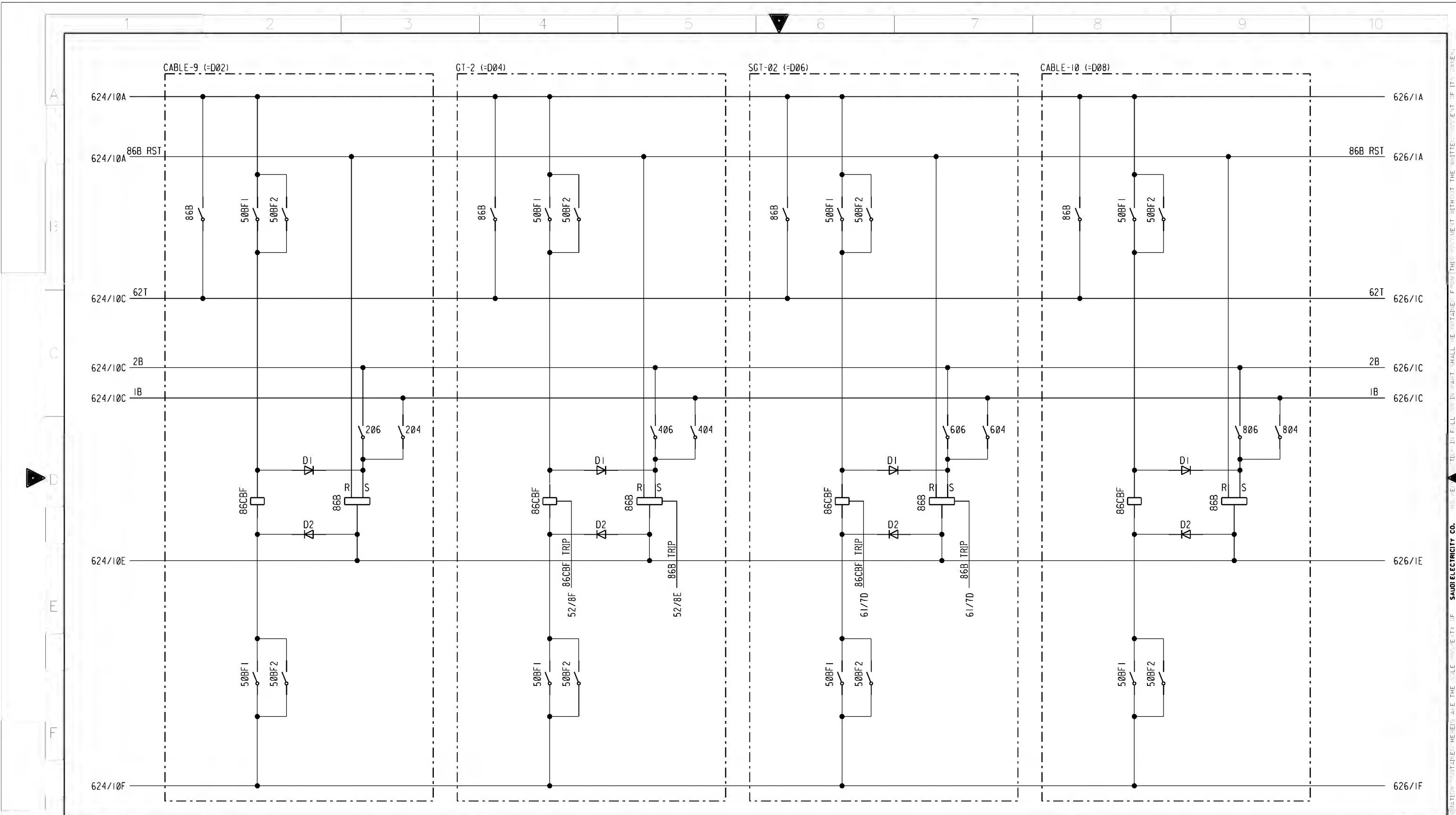
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						623
CONTRACT NO.	INDEX	PLANT NO.	DRAWING NUMBER	REV. NO.		
1-1031018.01	P	C257	CD-181242	03		



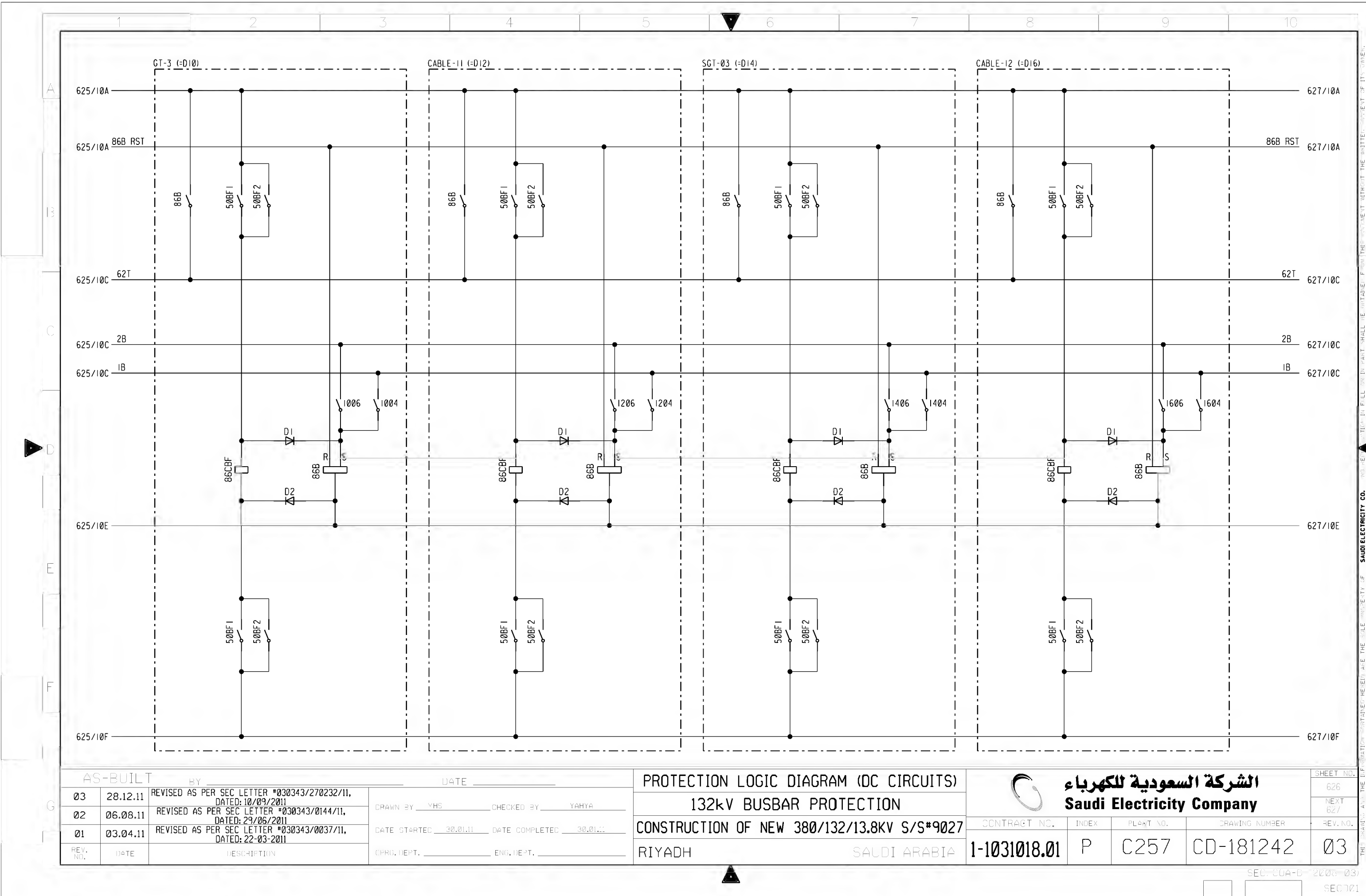
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BY _____				132kV BUSBAR PROTECTION				Saudi Electricity Company				624	
DATE _____				CONSTRUCTION OF NEW 380/132/13.8KV S/S#9027				Saudi Electricity Company				NEXT	
REV. NO.				RIYADH SAUDI ARABIA				CONTRACT NO.				REV. NO.	
DATE				03.04.11				INDEX				03	
DESCRIPTION				03.04.11				PLANT NO.				CD-181242	
DRAWN BY _____				03.04.11				DRAWING NUMBER				03	
CHECKED BY _____				03.04.11				CONTRACT NO.				03	
DATE STARTED _____				03.04.11				INDEX				03	
DATE COMPLETED _____				03.04.11				PLANT NO.				03	
CPRG. DEPT. _____				03.04.11				DRAWING NUMBER				03	
ENG. DEPT. _____				03.04.11				CONTRACT NO.				03	

SEC-COA-B-2008-031

SEC001



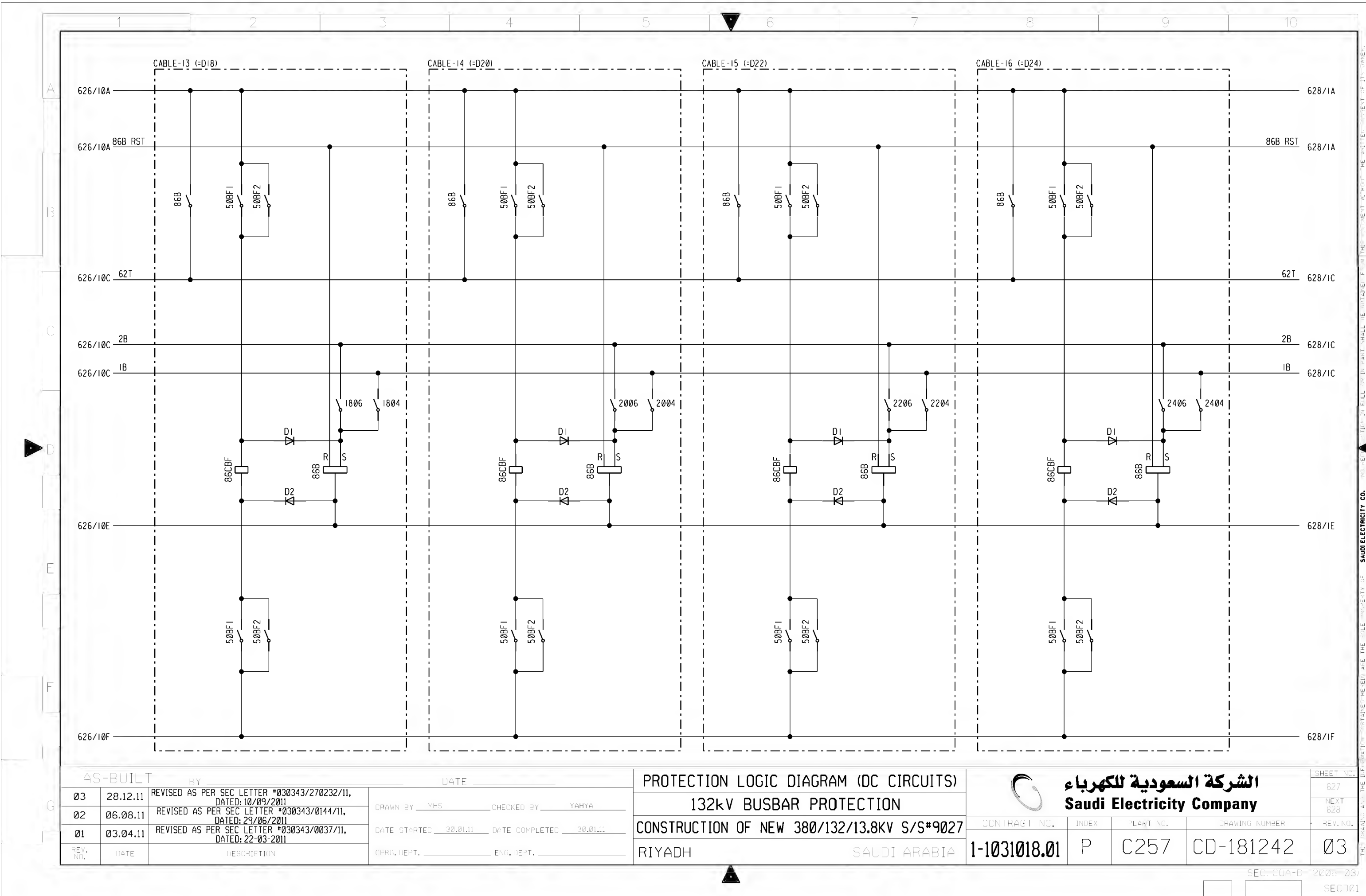
AS-BUILT				PROTECTION LOGIC DIAGRAM (DC CIRCUITS)				الشركة السعودية للكهرباء				SHEET NO.
BY _____				132kV BUSBAR PROTECTION				Saudi Electricity Company				625
03	28.12.11	REVISED AS PER SEC LETTER #030343/270232/11, DATED: 10/09/2011	DATE _____	CONSTRUCTION OF NEW 380/132/13.8KV S/S#9027				DRAWING NUMBER				REV. NO.
02	06.08.11	REVISED AS PER SEC LETTER #030343/0144/11, DATED: 29/06/2011	DRAWN BY VHS CHECKED BY YAHYA	RIYADH SAUDI ARABIA				CD-181242				03
01	03.04.11	REVISED AS PER SEC LETTER #030343/0037/11, DATED: 22-03-2011	DATE STARTED 30.01.11 DATE COMPLETED 30.01.11	1-1031018.01				C257				
REV. NO.	DATE	DESCRIPTION	CRG. DEPT. _____ ENG. DEPT. _____	P				SEC-00A-D-2008-031				SEC001

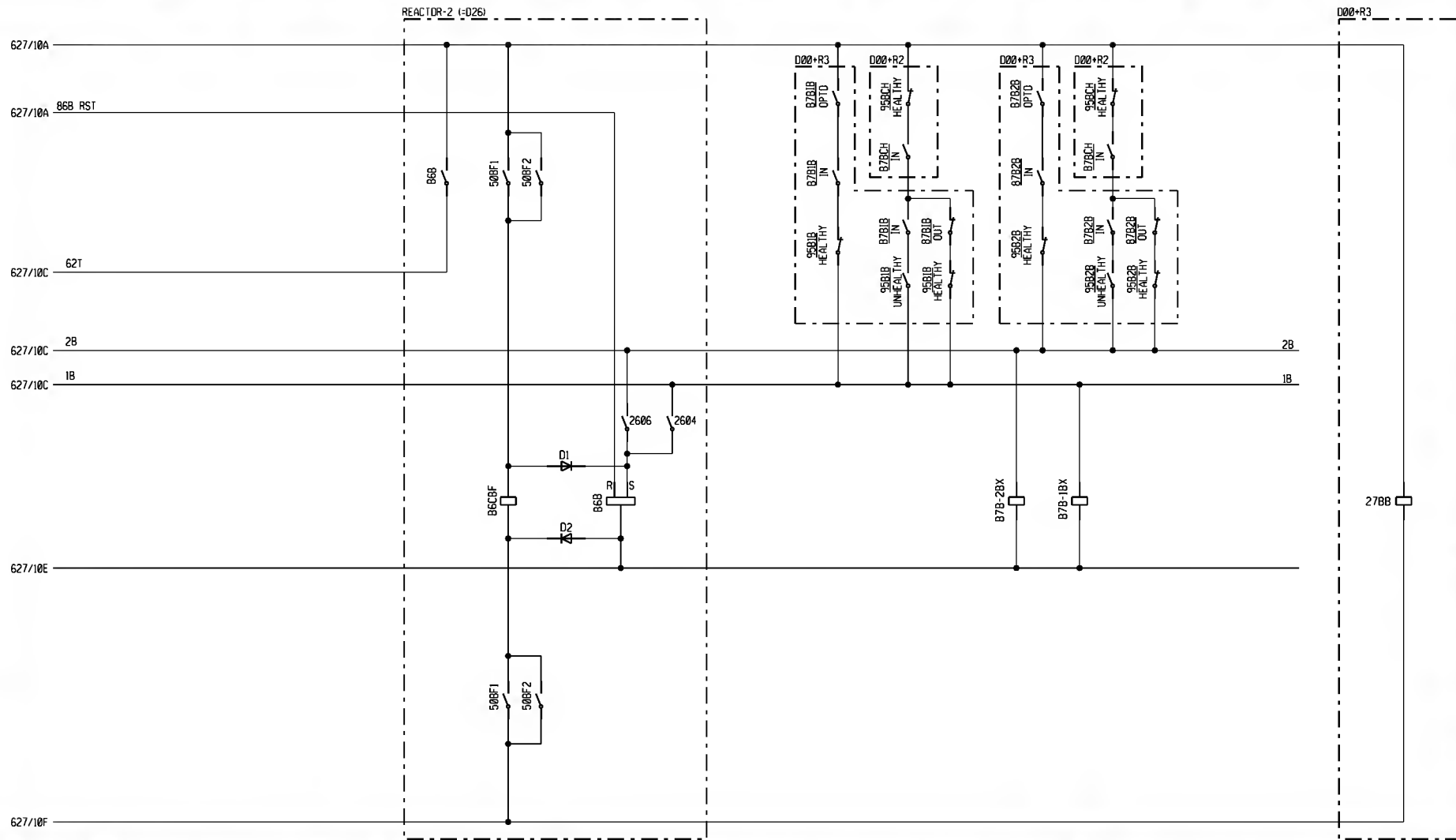


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01	03.04.11	REVISED AS PER SEC LETTER #030343/0037/11, DATED: 22-03-2011	DATE STARTED	30.01.11
REV. NO.	DATE	DESCRIPTION	DATE COMPLETED	30.01.11
			CRG. DEPT.	ENG. DEPT.

PROTECTION LOGIC DIAGRAM (DC CIRCUITS)	
132kV BUSBAR PROTECTION	
CONSTRUCTION OF NEW 380/132/13.8KV S/S#9027	
RIYADH SAUDI ARABIA	

		الشركة السعودية للكهرباء		Saudi Electricity Company		SHEET NO.
						626
CONTRACT NO.	INDEX	PLANT NO.	DRAWING NUMBER	REV. NO.		
1-1031018.01	P	C257	CD-181242	03		

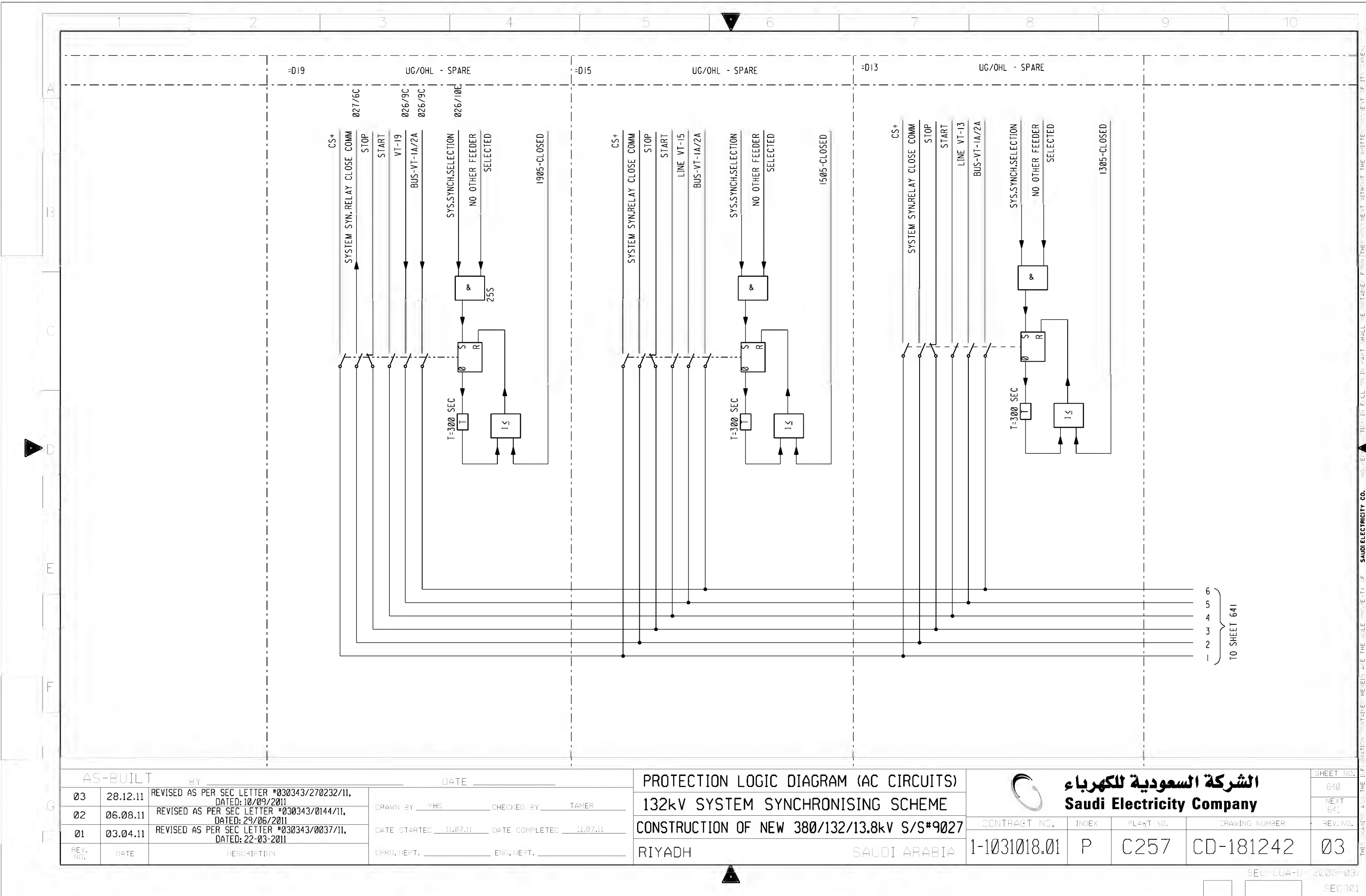




REV. NO.	DATE	DESCRIPTION	OPRC. DEPT.	END. DEPT.
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02	06.08.11	REVISED AS PER SEC LETTER #030343/0144/11, DATED: 29/05/2011	DATE STARTED: 30.01.11	DATE COMPLETED: 30.01.11
01	03.04.11	REVISED AS PER SEC LETTER #030343/0037/11, DATED: 22-03-2011		

PROTECTION LOGIC DIAGRAM (DC CIRCUITS)
 132kV BUSBAR PROTECTION
 CONSTRUCTION OF NEW 380/132/13.8KV S/S*9027
 RIYADH SAUDI ARABIA

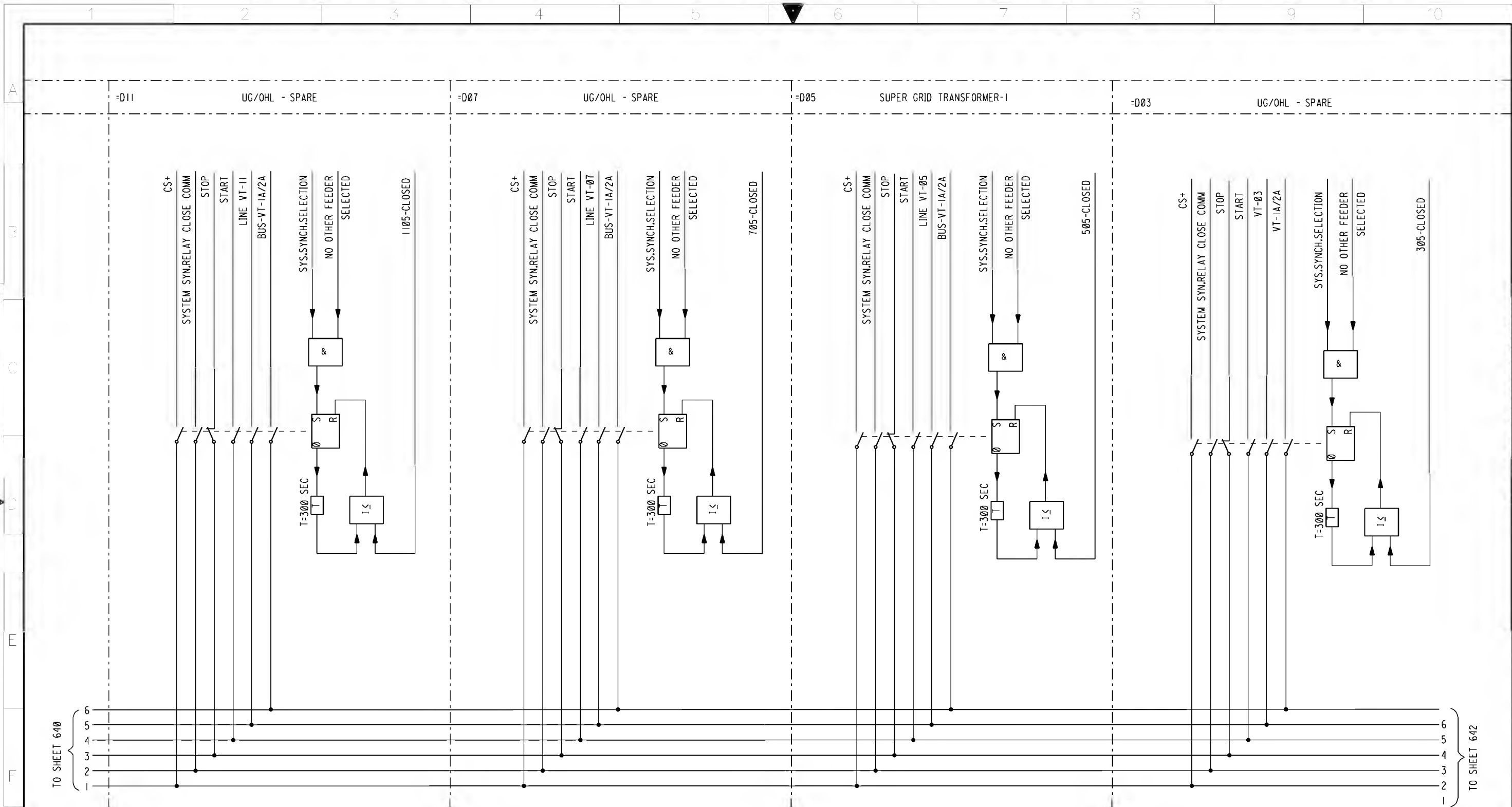
الشركة السعودية للكهرباء Saudi Electricity Company		SHEET NO.
CONTRACT NO.	INDEX	PLANT NO.
DRAWING NUMBER	REV. NO.	
1-1031018.01	P	C257
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AS-BUILT			BY _____	DATE _____
03	28.12.11	REVISED AS PER SEC LETTER #030343/270232/11, DATED: 10/09/2011	DRAWN BY <u>VHS</u> CHECKED BY <u>TAMER</u>	DATE STARTED <u>11.07.11</u> DATE COMPLETED <u>11.07.11</u>
02	06.08.11	REVISED AS PER SEC LETTER #030343/0144/11, DATED: 29/06/2011		
01	03.04.11	REVISED AS PER SEC LETTER #030343/0037/11, DATED: 22-03-2011		
REV. NO.	DATE	DESCRIPTION	CPRG. DEPT. _____	ENG. DEPT. _____

PROTECTION LOGIC DIAGRAM (AC CIRCUITS)	
132kV SYSTEM SYNCHRONISING SCHEME	
CONSTRUCTION OF NEW 380/132/13.8kV S/S#9027	
RIYADH	SAUDI ARABIA

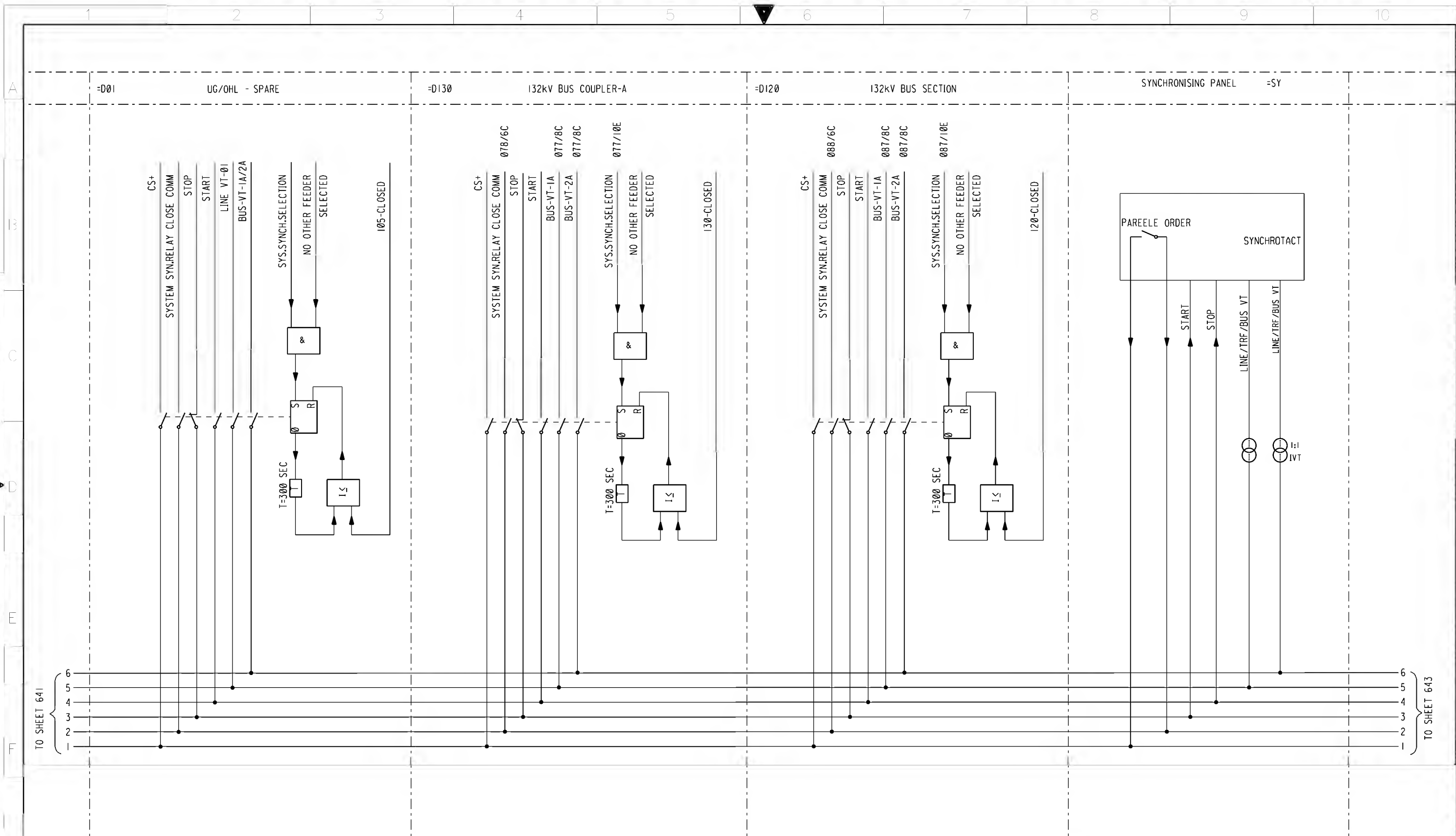
		الشركة السعودية للكهرباء		Saudi Electricity Company		SHEET NO.	
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CONTRACT NO.	INDEX	PLANT NO.	DRAWING NUMBER		REV. NO.		
1-1031018.01	P	C257	CD-181242		03		




AS-BUILT			BY		DATE		PROTECTION LOGIC DIAGRAM (AC CIRCUITS)				الشركة السعودية للكهرباء				SHEET NO.	
03	28.12.11	REVISED AS PER SEC LETTER #030343/270232/11, DATED: 10/09/2011	DRAWN BY MHS		CHECKED BY TAMER		132kV SYSTEM SYNCHRONISING SCHEME				Saudi Electricity Company				641	NEXT 642
02	06.08.11	REVISED AS PER SEC LETTER #030343/0144/11, DATED: 29/06/2011	DATE STARTED 11.07.11		DATE COMPLETED 11.07.11		CONSTRUCTION OF NEW 380/132/13.8kV S/S*9027				CONTRACT NO. 1-1031018.01				INDEX P	
01	03.04.11	REVISED AS PER SEC LETTER #030343/0037/11, DATED: 22-03-2011	UPRG. DEPT.		ENG. DEPT.		RIYADH SAUDI ARABIA				PLANT NO. C257				DRAWING NUMBER CD-181242	REV. NO. 03
REV. NO.	DATE	DESCRIPTION														

SEC/CCA-D (2008/23)

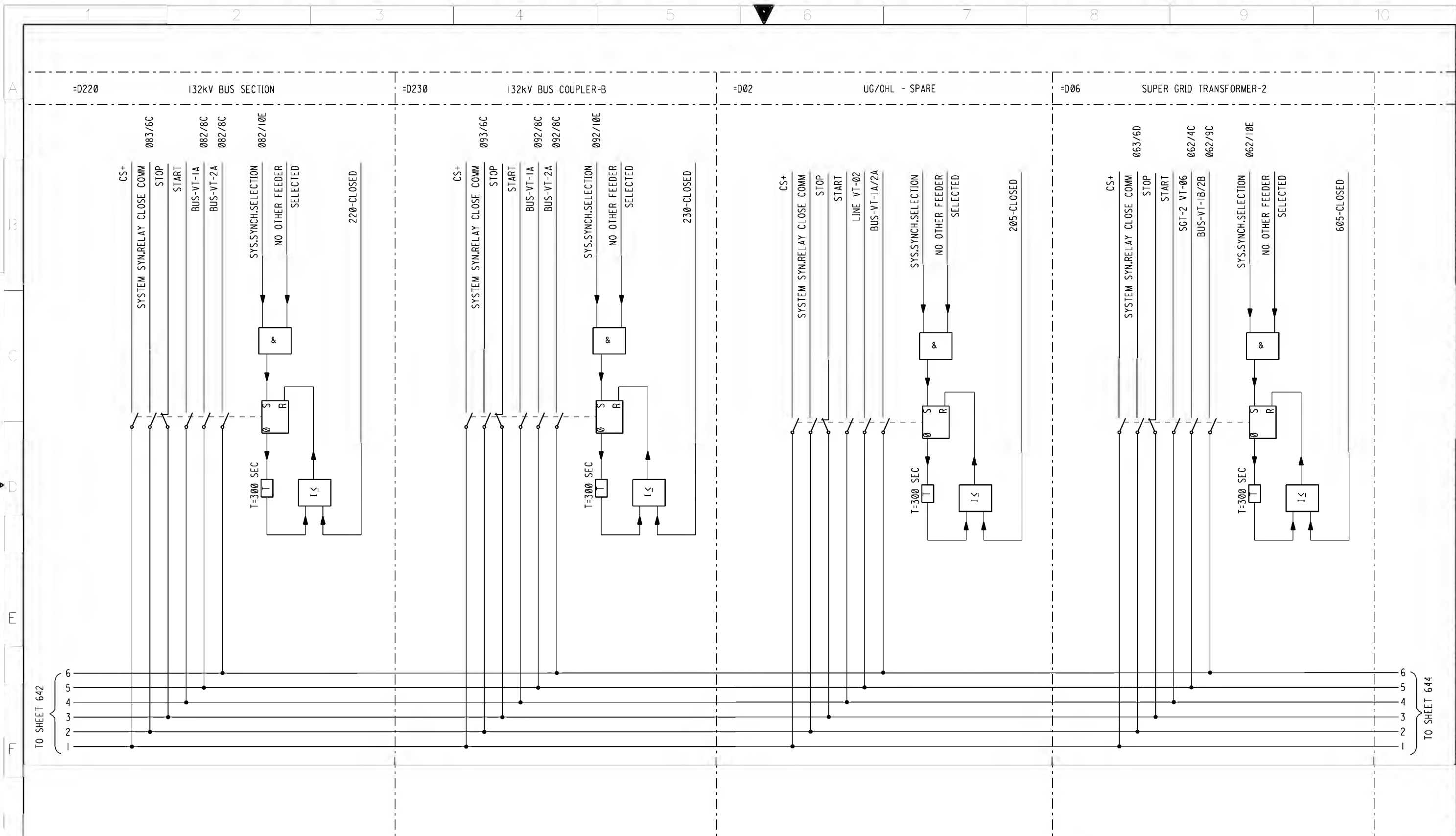
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AS-BUILT		BY	DATE		PROTECTION LOGIC DIAGRAM (AC CIRCUITS)		<div> الشركة السعودية للكهرباء Saudi Electricity Company</div>				SHEET NO.
03	28.12.11	REVISED AS PER SEC LETTER #030343/270232/11, DATED: 10/09/2011			132kV SYSTEM SYNCHRONISING SCHEME						642
02	06.08.11	REVISED AS PER SEC LETTER #030343/0144/11, DATED: 29/06/2011	CRAWN BY	VHS	CHECKED BY	TAMER					NEXT 643
01	03.04.11	REVISED AS PER SEC LETTER #030343/0037/11, DATED: 22-03-2011	DATE STARTED		11.07.11	DATE COMPLETED		11.07.11	CONSTRUCTION OF NEW 380/132/13.8kV S/S#9027		REV. NO.
REV. NO.	DATE	DESCRIPTION	OPRG. DEPT.		ENG. DEPT.		RIYADH		SAUDI ARABIA		
							CONTRACT NO.	INDEX	PLANT NO.	DRAWING NUMBER	
							1-1031018.01	P	C257	CD-181242	03

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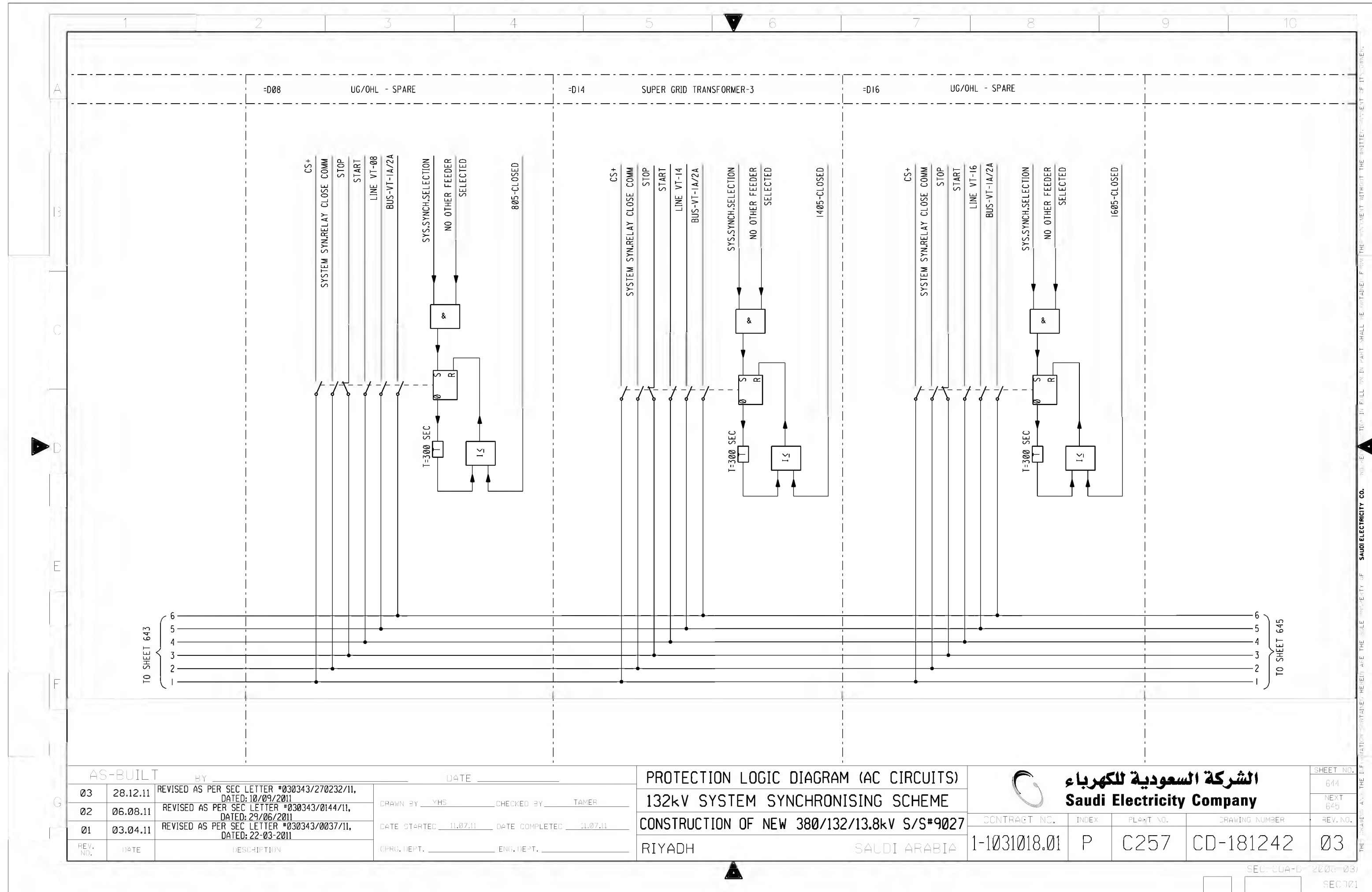
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AS-BUILT			DATE		PROTECTION LOGIC DIAGRAM (AC CIRCUITS)		الشركة السعودية للكهرباء		SHEET NO.	
03	28.12.11	REVISED AS PER SEC LETTER #030343/270232/11, DATED: 10/09/2011	DRAWN BY	VHS	CHECKED BY	TAMER	Saudi Electricity Company		643	
02	06.08.11	REVISED AS PER SEC LETTER #030343/0144/11, DATED: 29/06/2011	DATE STARTED	11.07.11	DATE COMPLETED	11.07.11	CONSTRUCTION OF NEW 380/132/13.8kV S/S#9027		NEXT	644
01	03.04.11	REVISED AS PER SEC LETTER #030343/0037/11, DATED: 22-03-2011	DATE STARTED	11.07.11	DATE COMPLETED	11.07.11	RIYADH SAUDI ARABIA		REV. NO.	03
REV. NO.	DATE	DESCRIPTION	DATE STARTED	DATE COMPLETED	DATE COMPLETED	DATE COMPLETED	CONTRACT NO.	INDEX	PLANT NO.	DRAWING NUMBER

SEC-CUA-B-2008-031

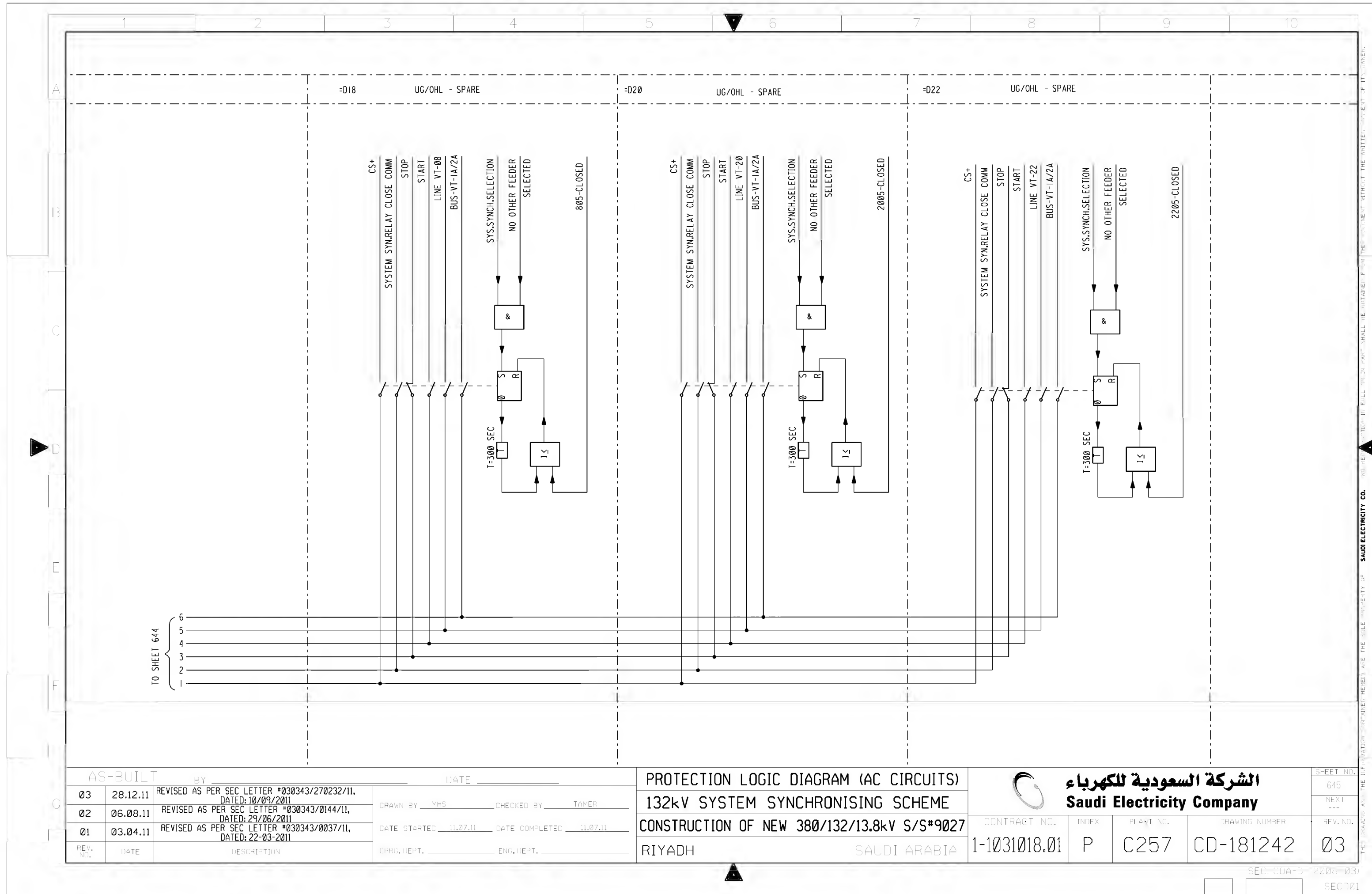
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AS-BUILT			BY _____	DATE _____		
03	28.12.11	REVISED AS PER SEC LETTER #030343/270232/11, DATED: 10/09/2011	DRAWN BY VHS	CHECKED BY TAMER	DATE STARTED 11.07.11	DATE COMPLETED 11.07.11
02	06.08.11	REVISED AS PER SEC LETTER #030343/0144/11, DATED: 29/06/2011				
01	03.04.11	REVISED AS PER SEC LETTER #030343/0037/11, DATED: 22-03-2011				
REV. NO.	DATE	DESCRIPTION	CPRG. DEPT. _____ ENG. DEPT. _____			

PROTECTION LOGIC DIAGRAM (AC CIRCUITS)
132kV SYSTEM SYNCHRONISING SCHEME
CONSTRUCTION OF NEW 380/132/13.8kV S/S#9027
RIYADH SAUDI ARABIA

		الشركة السعودية للكهرباء		Saudi Electricity Company		SHEET NO.
						644
						NEXT 645
CONTRACT NO.	INDEX	PLANT NO.	DRAWING NUMBER		REV. NO.	
1-1031018.01	P	C257	CD-181242		03	



AS-BUILT			DATE	
03	28.12.11	REVISED AS PER SEC LETTER #030343/270232/11, DATED: 10/09/2011	DRAWN BY	CHECKED BY
02	06.08.11	REVISED AS PER SEC LETTER #030343/0144/11, DATED: 29/06/2011	YHS	TAMER
01	03.04.11	REVISED AS PER SEC LETTER #030343/0037/11, DATED: 22-03-2011	DATE STARTED	DATE COMPLETED
			11.07.11	11.07.11
REV. NO.	DATE	DESCRIPTION	OPRG. DEPT.	ENG. DEPT.

PROTECTION LOGIC DIAGRAM (AC CIRCUITS)
132kV SYSTEM SYNCHRONISING SCHEME
CONSTRUCTION OF NEW 380/132/13.8kV S/S#9027
RIYADH SAUDI ARABIA

		الشركة السعودية للكهرباء		Saudi Electricity Company		SHEET NO.
						645
CONTRACT NO.	INDEX	PLANT NO.	DRAWING NUMBER	REV. NO.		
1-1031018.01	P	C257	CD-181242	03		